

# TC-WR10ES/WR810

## SERVICE MANUAL



*US Model*  
TC-WR10ES/WR810  
*Canadian Model*  
*AEP Model*  
*UK Model*  
*E Model*  
TC-WR810


Dolby noise reduction manufactured under license from  
Dolby Laboratories Licensing Corporation.  
"DOLBY" and the double-D symbol  are trademarks of  
Dolby Laboratories Licensing Corporation.

PHOTO : TC-WR810

Model Name Using Similar Mechanism	New Mechanism
Tape Transport Mechanism Type	WR10ES, WR810 : except for US Model TCM-170RB12 WR810 : US Model TCM-170RB14

### SPECIFICATIONS

#### Recording system

4-track 2-channel stereo

#### Fast winding time

Approx. 90sec.(with HF-60 cassette)

#### Bias

AC Bias

#### Signal-to-noise ratio (NAB, at peak level)

Dolby NR switch	OFF	B-TYPE ON	C-TYPE ON
Cassette			
TYPE IV (Sony METAL-ES)	58dB	65dB	71dB
TYPE II (Sony UX-S)	57dB	64dB	70dB
TYPE I (Sony HF-S)	54dB	61dB	67dB

#### Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

#### Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	20-20,000Hz ( $\pm 3$ dB) (WR10ES, WR810 : except for US Model) 30-18,000Hz ( $\pm 3$ dB) (WR810 : US Model) 30-15,000Hz (0VU recording)
TYPE II cassette (Sony UX-S)	30-17,000Hz ( $\pm 3$ dB)
TYPE I cassette (Sony HF-S)	30-15,000Hz ( $\pm 3$ dB)

Wow and flutter 0.09% WRMS (NAB)

#### Inputs

Line inputs (phono jacks)	Sensitivity	77.5mV ( $-20$ dB)
	Input impedance	50k ohms

#### Outputs

Line outputs (phono jacks)	Rated output level	0.44V ( $-5$ dB) at a load impedance 47kohms
	Load impedance	Over 10kohms
Headphone output (stereo phone jack)	Output level	$-28$ dB at 8ohms (WR10ES, WR810: except for US Model) 0-0.3mW at a load impedance of 32ohms (WR810:US Model)

#### General

##### Power requirements

US, Canadian Model : 120V AC, 60Hz

AEP Model : 220V AC, 50/60Hz

UK Model : 240V AC, 50/60Hz

E Model : 120-220-240V AC adjustable, 50/60Hz

##### Power consumption

30watts

##### Dimensions

Approx. 430 $\times$ 118 $\times$ 275mm (w/h/d)  
(17 $\times$ 4 $\times$ 10 inches)

including projecting parts and controls

##### Weight

Approx. 4.6kg (10 lbs 3 oz)

##### Supplied accessory

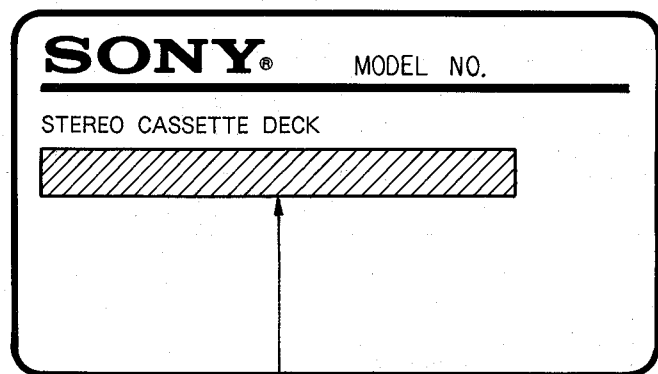
Audio connecting cord (2)



**STEREO CASSETTE DECK**  
**SONY®**

Section	Title	Page
	Specifications.....	1
	Safety Check-out.....	2
<b>1. GENERAL</b>		
	Front Panel Parts Identification .....	3
	Connections.....	4
<b>2. DISASSEMBLY</b>		5
<b>3. ADJUSTMENTS</b>		
	3-1. Mechanical Adjustments.....	6
	3-2. Electrical Adjustments.....	6
<b>4. DIAGRAMS</b>		
	4-1. Printed Wiring Boards.....	10
	4-2. Schematic Diagram.....	15
	4-3. Semiconductor Lead Layouts.....	20
	4-4. Circuit Boards Location.....	21
	4-5. M50964-206SP (IC801).....	22
<b>5. EXPLODED VIEWS</b>		23
<b>6. ELECTRICAL PARTS LIST</b>		27

—MODEL IDENTIFICATION—  
(Specification Label)



US, Canadian model : AC 120V 60Hz 30W  
 AEP model : AC 220V~50/60Hz 30W  
 UK model : AC 240V~50/60Hz 30W  
 E model : AC 120, 220, 240V~50/60Hz 30W

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

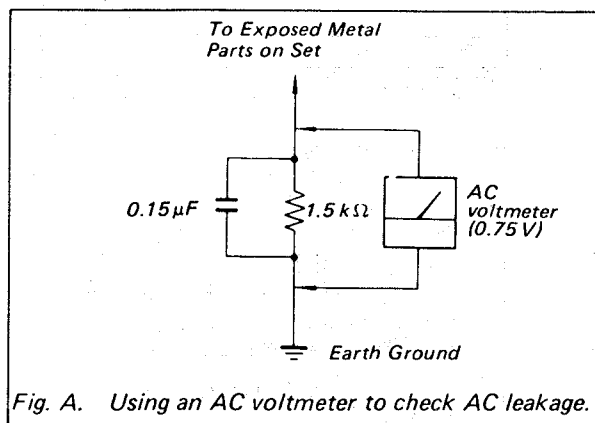


Fig. A. Using an AC voltmeter to check AC leakage.

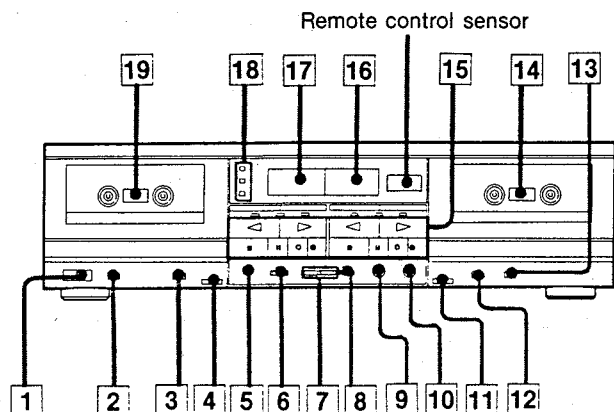
**ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

## SECTION 1

### GENERAL

## Front Panel Parts Identification



- 1** POWER switch
- 2** TIMER switch
- 3** DIR (direction) MODE selector
- 4** ▲ (eject) button (deck A)
- 5** PHONES jack (stereo phone jack)
- 6** AMS (Automatic music sensor)/BLANK SKIP button and indicator
- 7** SYNCHRO DUBBING buttons and indicators  
HIGH SPEED/NORMAL SPEED
- 8** A + B REC (record) button and indicator
- 9** BALANCE control  
Adjusts the right-left balance during recording.
- 10** REC LEVEL (recording level) control

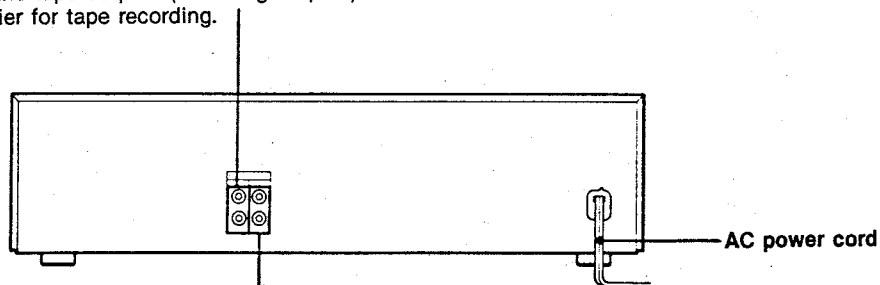
- 11** ▲ (eject) button (deck B)
- 12** DOLBY NR switch
- 13** MPX FILTER switch
- 14** Cassette holder (deck B)
- 15** Tape operation buttons and direction mode indicators
  - ◀◀ (leftward fast winding) button
  - ▶▶ (rightward fast winding) button
  - ▶ (forward play) button
  - ◀ (reverse play) button
  - (stop) button
  - || (pause) button and indicator
  - REC MUTE (record muting) button
  - REC (record) button and indicator

- 16** PEAK LEVEL METER
- 17** DIGITAL COUNTER
- 18** COUNTER buttons  
RESET button/MEMORY button A/B button
- 19** Cassette holder (deck A)

## Connections

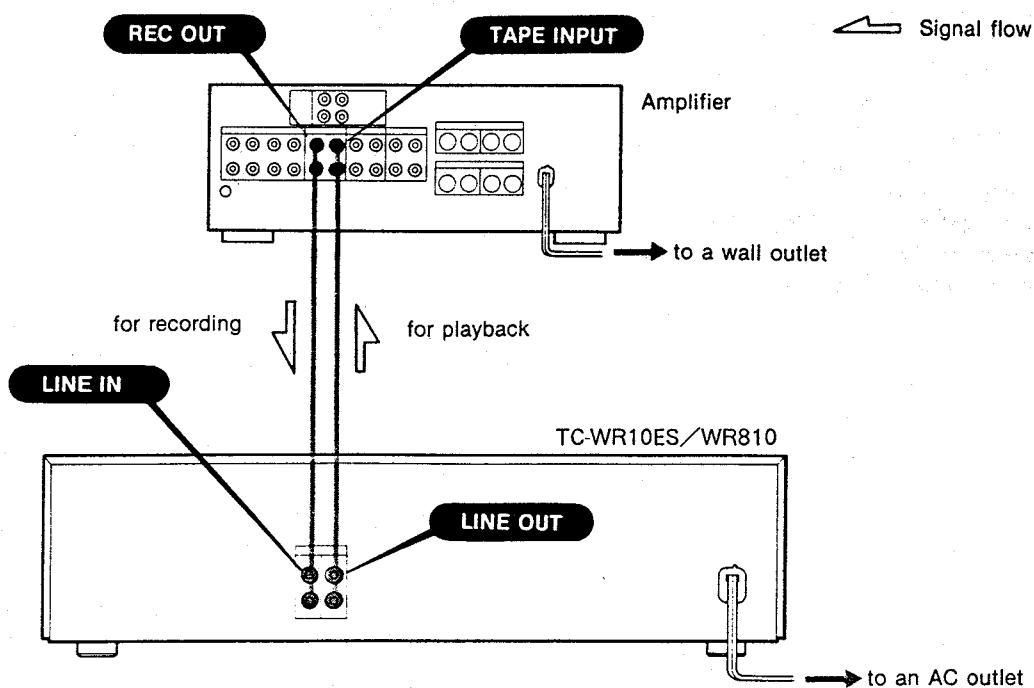
### Rear Panel Parts Identification

**LINE IN (line input) jacks (phono jacks)**  
Connect to the tape outputs (recording outputs) of an amplifier for tape recording.



**LINE OUT (line output) jacks (phono jacks)**  
Connect to the tape inputs of an amplifier for playback.

### Basic Connection



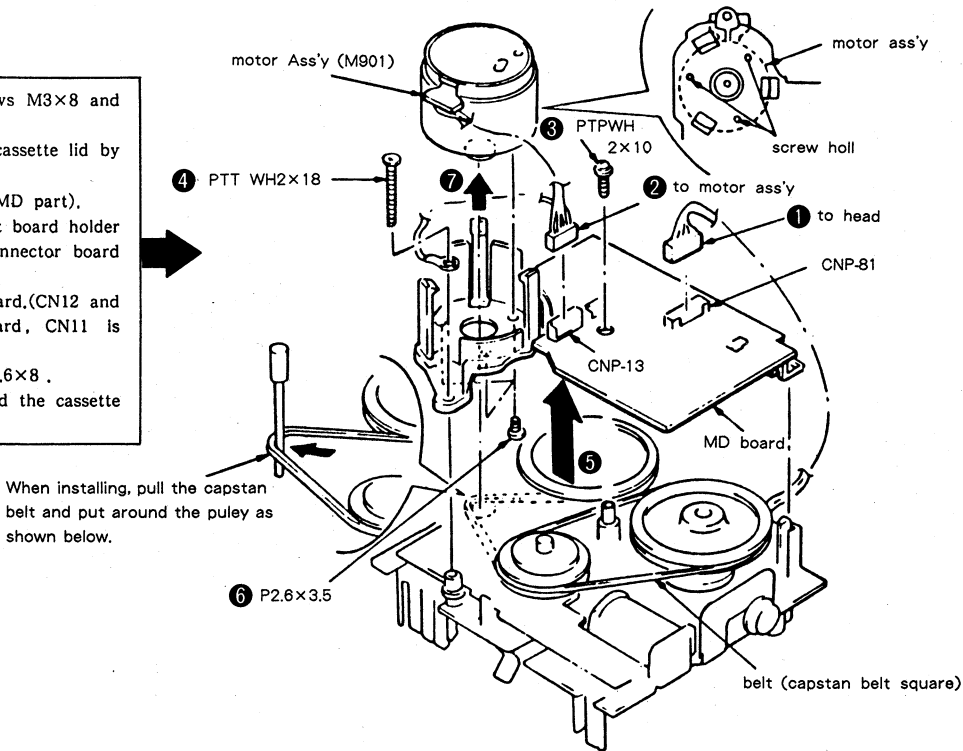


SECTION 2  
DISASSEMBLY

Note : Follow the disassembly procedure  
in the numerical order given.

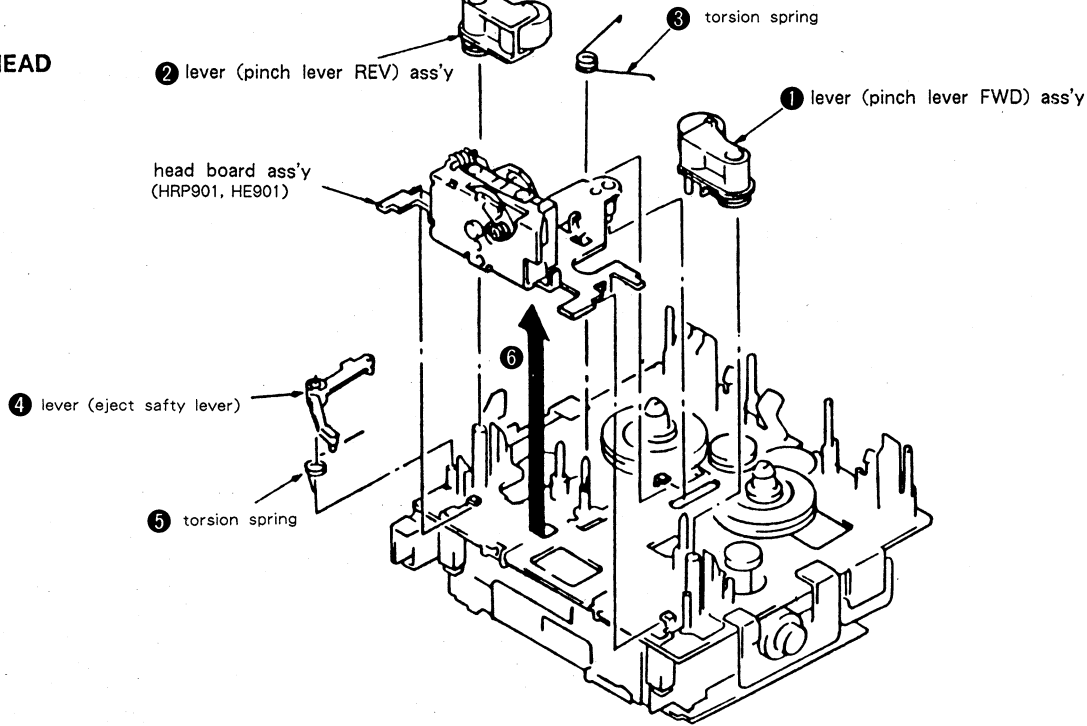
MOTOR

- 1 Unscrew the four case attachment screws M3×8 and remove the upper case.
- 2 Press the eject button and remove the cassette lid by sliding it upward.
- 3 Remove the front panel assembly (incl. MD part).
- 4 Remove the connector and printed circuit board holder from the MD board, and remove the connector board and HXPRO board.
- 5 Remove the connectors of the main board.(CN12 and CN82 are connected to the MD board, CN11 is connected to the leaf SW board.)
- 6 Unscrew four MD attachment screws B2.6×8.
- 7 Remove the cassette holder assembly, and the cassette holding plate in that order.



P2.6×3.5

HEAD



SECTION 3  
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :  
record/playback head    pinch roller  
erase head                rubber belts  
capstan                    idler
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed in the rated power supply voltage unless otherwise noted.

Torque Measurement

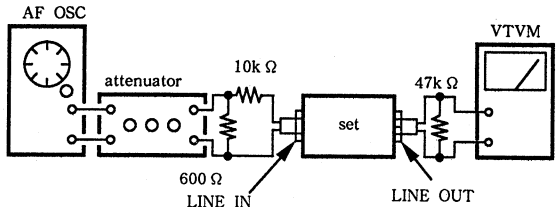
Torque	Torque meter	Meter reading
FWD	CQ-102C	27 to 75g · cm (0.38 to 1.04 oz · inch)
FWD Back tension	CQ-102C	1 to 10g · cm (0.014 to 0.13 oz · inch)
REV	CQ-102RC	27 to 75g · cm (0.38 to 1.04 oz · inch)
REV Back tension	CQ-102RC	1 to 10g · cm (0.014 to 0.13 oz · inch)
FF, REW	CQ-201B	95 to 165g · cm (1.33 to 2.29 oz · inch)

3-2. ELECTRICAL ADJUSTMENT

Note :The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording.  
The adjustments should be performed for both L-CH and R-CH.

- Switches and controls should be set as follows unless otherwise specified.  
DOLBY NR switch : OFF  
DIRECTION switch :   
TIMER switch : OFF  
MPX FILTER switch : OFF
- Standard Record :  
Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

—Record Mode—



Standard Input Level

input terminal	LINE IN
source impedance	10k Ω
input level	0.25V (−10dB)

Standard Output Level

output terminal	LINE OUT
load impedance	47k Ω
output level	0.44V (−5dB)

Test tape

Type	Signal	Used for
P-4-A100	10kHz, −10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

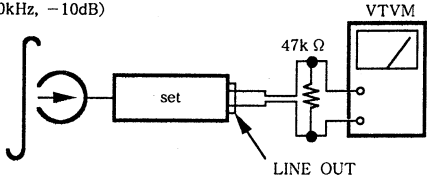
Record/Playback Head Azimuth Adjustment

DECK A    DECK B

Procedure :

1. Mode : FWD playback

test tape  
P-4-A100  
(10kHz, −10dB)



2. Turn levels, screw 1dB.

L-CH peak  
Screw position

3. Phase Mode :

test tape  
P-4-A100  
(10kHz)

4. Set in  
5. After compou

Adjustment

# SECTION 3

## ADJUSTMENTS

### 3-2. ELECTRICAL ADJUSTMENT

**Note :** The adjustment should be performed in the order given in the service manual. As a rule, adjustment about playback should be performed before adjustment about recording.

The adjustments should be performed for both L-CH and R-CH.

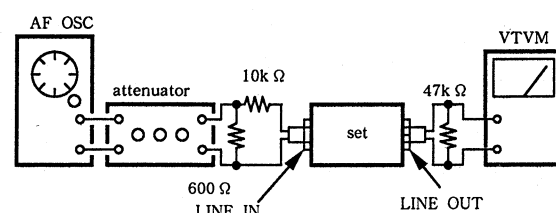
- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch : OFF  
DIRECTION switch :  $\rightleftarrows$   
TIMER switch : OFF  
MPX FILTER switch : OFF

- Standard Record :

Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

#### —Record Mode—



#### Standard Input Level

input terminal	LINE IN
source impedance	10k $\Omega$
input level	0.25V (-10dB)

#### Standard Output Level

output terminal	LINE OUT
load impedance	47k $\Omega$
output level	0.44V (-5dB)

#### Test tape

Type	Signal	Used for
P-4-A100	10kHz, -10dB	Azimuth Adjustment
P-4-L300	315Hz, 0dB	PB Level Adjustment
WS-48B	3kHz, 0dB	Tape Speed Adjustment

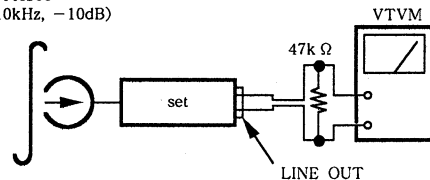
#### Record/Playback Head Azimuth Adjustment

DECK A DECK B

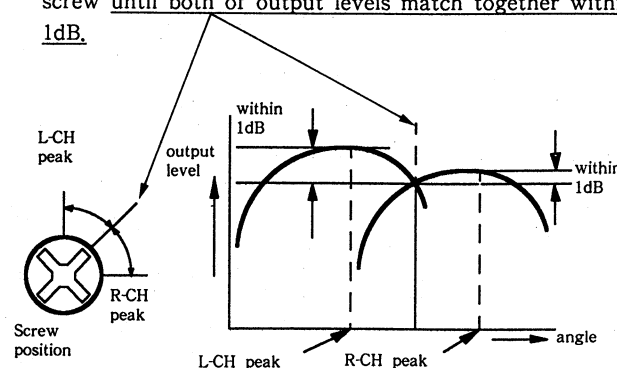
#### Procedure :

- Mode : FWD playback

test tape  
P-4-A100  
(10kHz, -10dB)

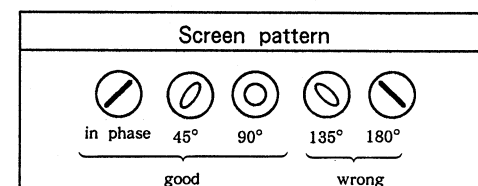
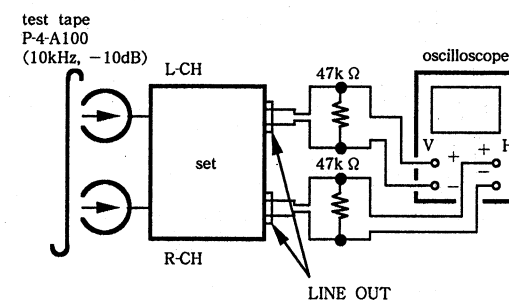


- Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 1dB.



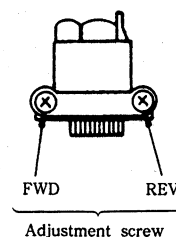
- Phase Check

Mode : playback



- Set in the REV mode and repeat the step 1-3.
- After the adjustment, lock the screws with locking compound.

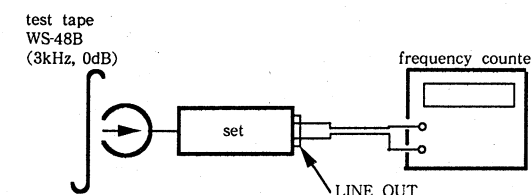
Adjustment Location : Record/Playback head



#### Tape Speed Adjustment DECK A DECK B

#### Procedure :

Mode : playback



Perform high speed adjustment before normal speed adjustment

(high speed adjustment)

- Short test pin TP801 on audio system control board.
- Set to FWD playback mode.
- Keep on pressing the HIGH SPEED DUBBING switch.
- Adjust the variable resistor (H) on rear side of motor M901 so that the frequency counter reading becomes  $6,000 \pm 20$ Hz.
- After adjustment, disconnect TP801 shorted in step 1.

(normal speed adjustment)

- Set to FWD playback mode.
- Adjust the variable resistor (L) on the rear side of motor M901 so that the frequency counter reading becomes  $3,000 \pm 10$ Hz.

Frequency difference between the beginning and the end of the tape should be within 3%.

Frequency difference between deck A and deck B the beginning of the tape should be within 1.5%.

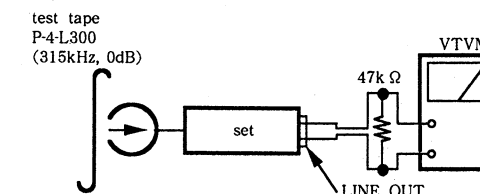
#### Adjustment Location :

motor rear side (both A and B deck)

#### Playback Level Adjustment DECK A DECK B

#### Procedure :

Mode : playback



Adjust RV41 (L-CH), RV61 (R-CH) so that the reading on VTVM meets the adjustmeny limits below.

#### Adjustment Limits :

LINE OUT level :  $-5 \pm 0.5$ dB (0.42-0.46V)

Level difference between channels : less than 0.5dB

Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location : MD board

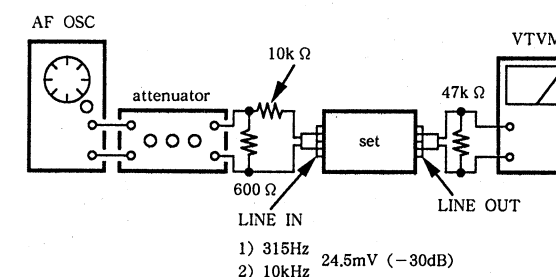
#### Record Bias Adjustment DECK A DECK B

#### Setting :

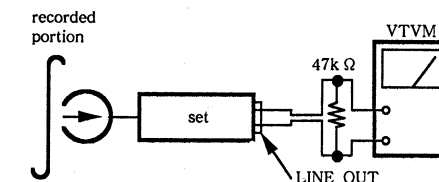
REC LEVEL control : Standard Record (See page 6.)  
test pin TP801 : short

#### Procedure :

- Mode : record



- Mode : playback

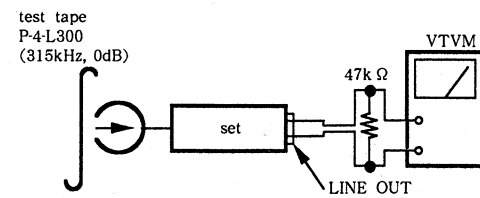


Playback the signal recorded in step 1.  
Confirm that the 10kHz playback output is  $0 \pm 0.5$ dB relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

Adjustment Location : HX PRO board

**Playback Level Adjustment** **DECK A** **DECK B****Procedure :**

Mode : playback



Adjust RV41 (L-CH), RV61 (R-CH) so that the reading on VTVM meets the adjustmeny limits below.

**Adjustment Limits :**LINE OUT level :  $-5 \pm 0.5\text{dB}$  (0.42–0.46V)

Level difference between channels : less than 0.5dB

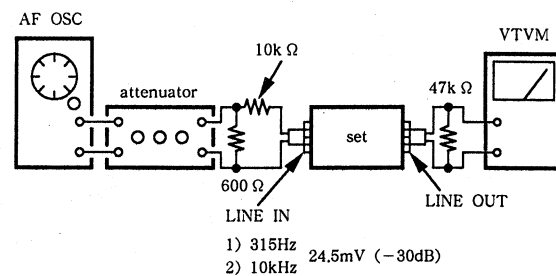
Check that the LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

**Adjustment Location :** MD board**Record Bias Adjustment** **DECK A** **DECK B****Setting :**

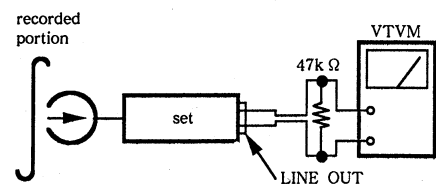
REC LEVEL control : Standard Record (See page 6.)  
test pin TP801 : short

**Procedure :**

1. Mode : record



2. Mode : playback



Playback the signal recorded in step 1.

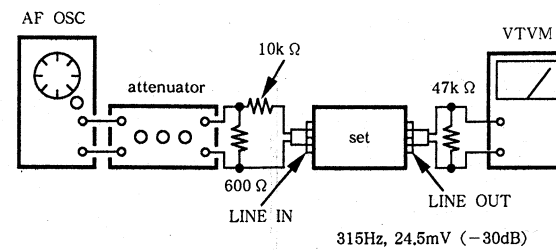
Confirm that the 10kHz playback output is  $0 \pm 0.5\text{dB}$  relative to the 315Hz output. If necessary, adjust RV42 (L-CH), RV62 (R-CH) and repeat the steps given above.

**Adjustment Location :** HX PRO board**Record Level Adjustment** **DECK A** **DECK B****Setting :**

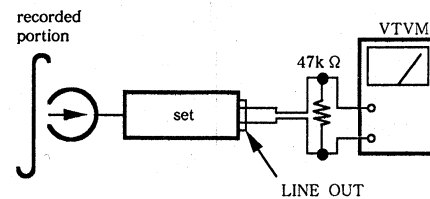
REC LEVEL control : Standard Record (See page 6.)  
test pin TP801 : short

**Procedure :**

1. Mode : record



2. Mode : playback

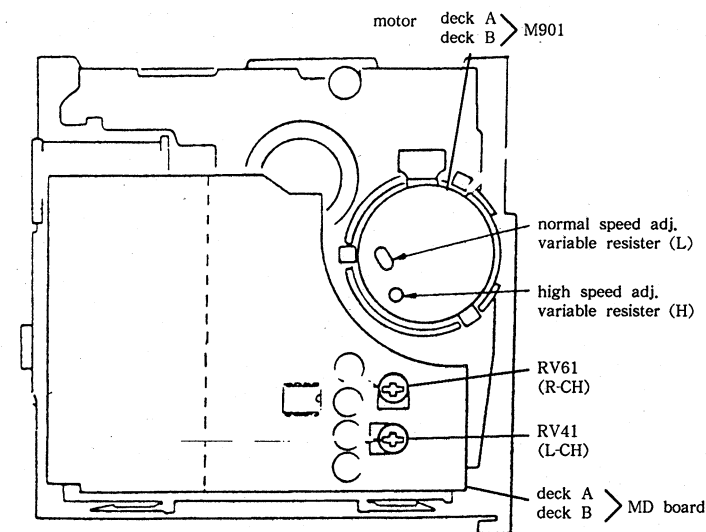


3. Playback the signal recorded in step 1.

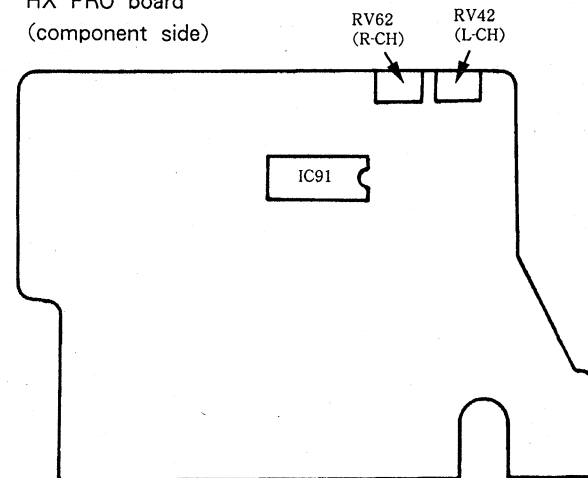
Confirm that the signal level is within the adjustment limits below. If necessary, adjust DECK A : RV101 (L-CH), RV201 (R-CH) DECK B : RV102 (L-CH), RV202 (R-CH) and repeat the step1-2.

**Adjustment Limits :**  $-25\text{dB} \pm 0.5\text{dB}$  (42–46mV)**Adjustment Location :** audio system control board (component side)**Quick Reverse Sensitivity Adjustment** **DECK A** **DECK B****Conditions :**DIRECTION MODE switch :  $\rightarrow$ **Adjustment Procedure :**

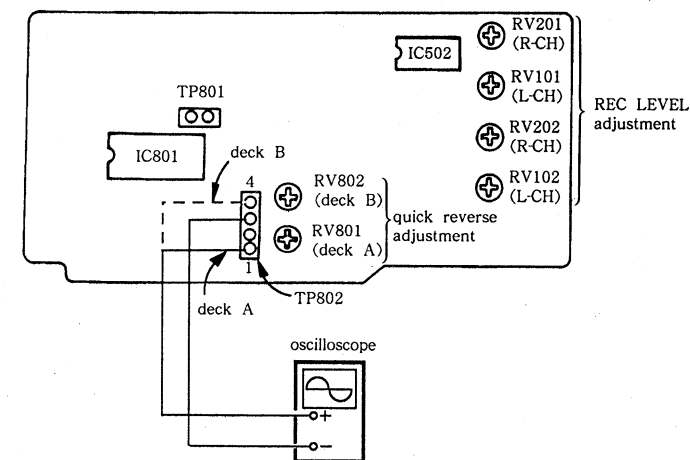
1. Connect the oscilloscope to test point TP802.
2. Load C-120 tape cassette and playback the leading portion in FWD mode.
3. Adjust the RV801 (DECK A), RV802 (DECK B) for  $4 \pm 0.5\text{V}$  reading on the oscilloscope.
4. Playback C-120 tape cassette in FWD mode again.
5. Confirm that the reading on the oscilloscope is "L" level at the magnetic portion of the tape.
6. Confirm that the tape cassette stops around the tape end (border of the leading and the magnetic portions).

**Adjustment Location :** audio system control board (component side)**Adjustment Parts Location Diagrams**

HX PRO board (component side)



audio system control board (component side)

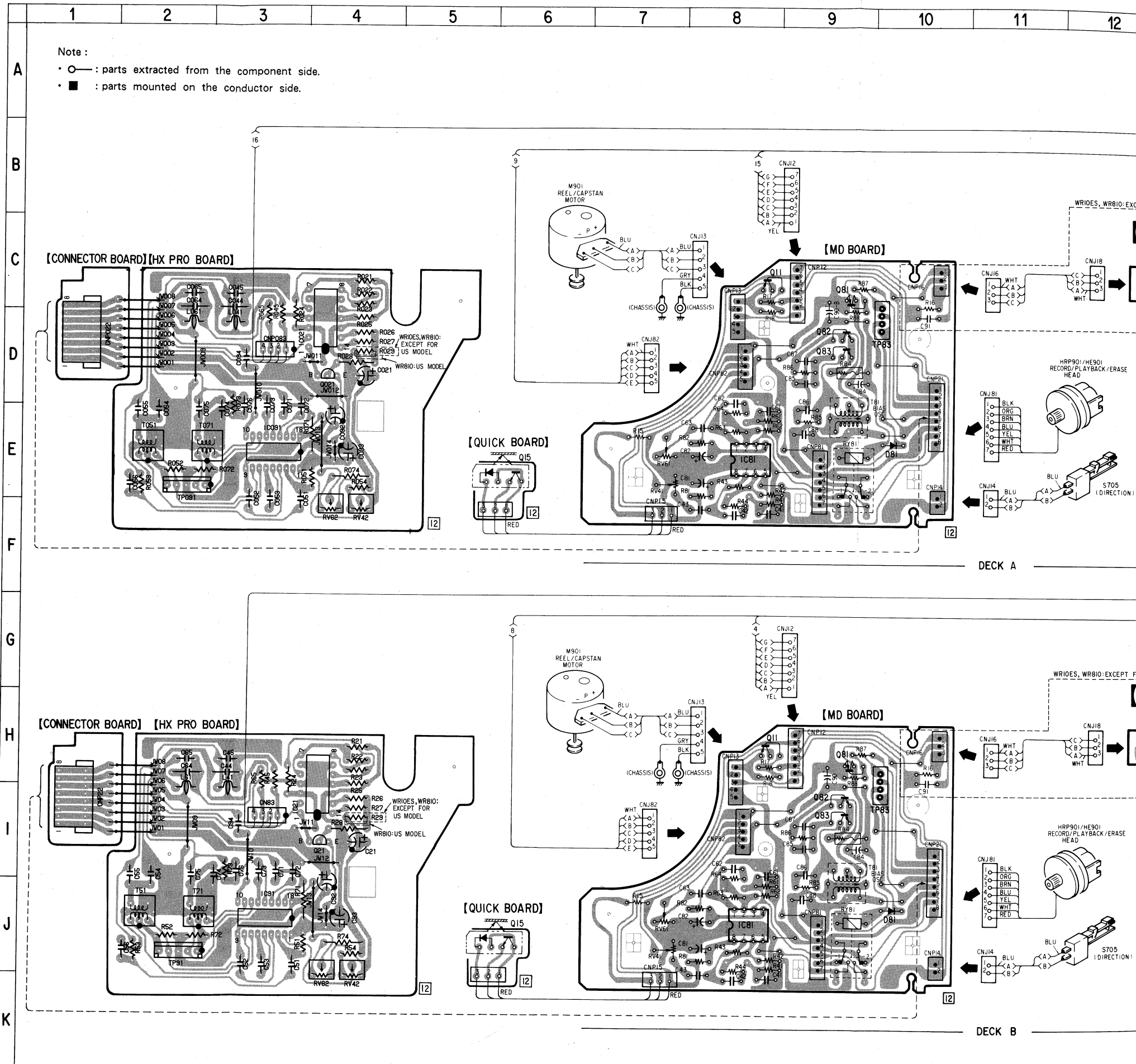


# SECTION 4 DIAGRAMS

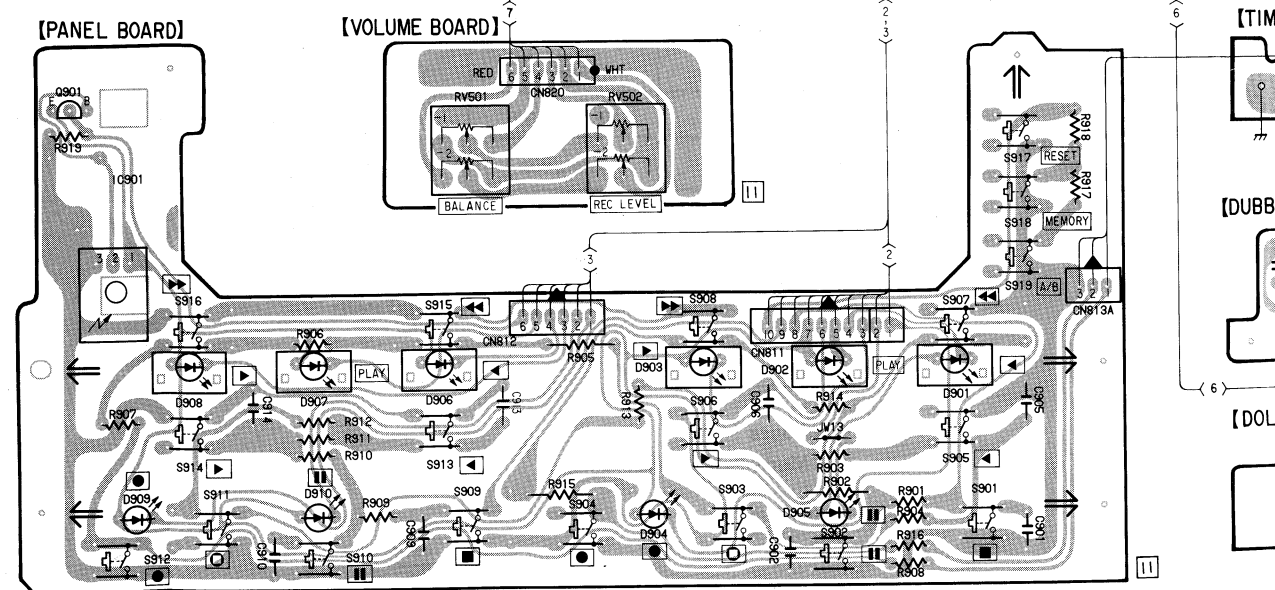
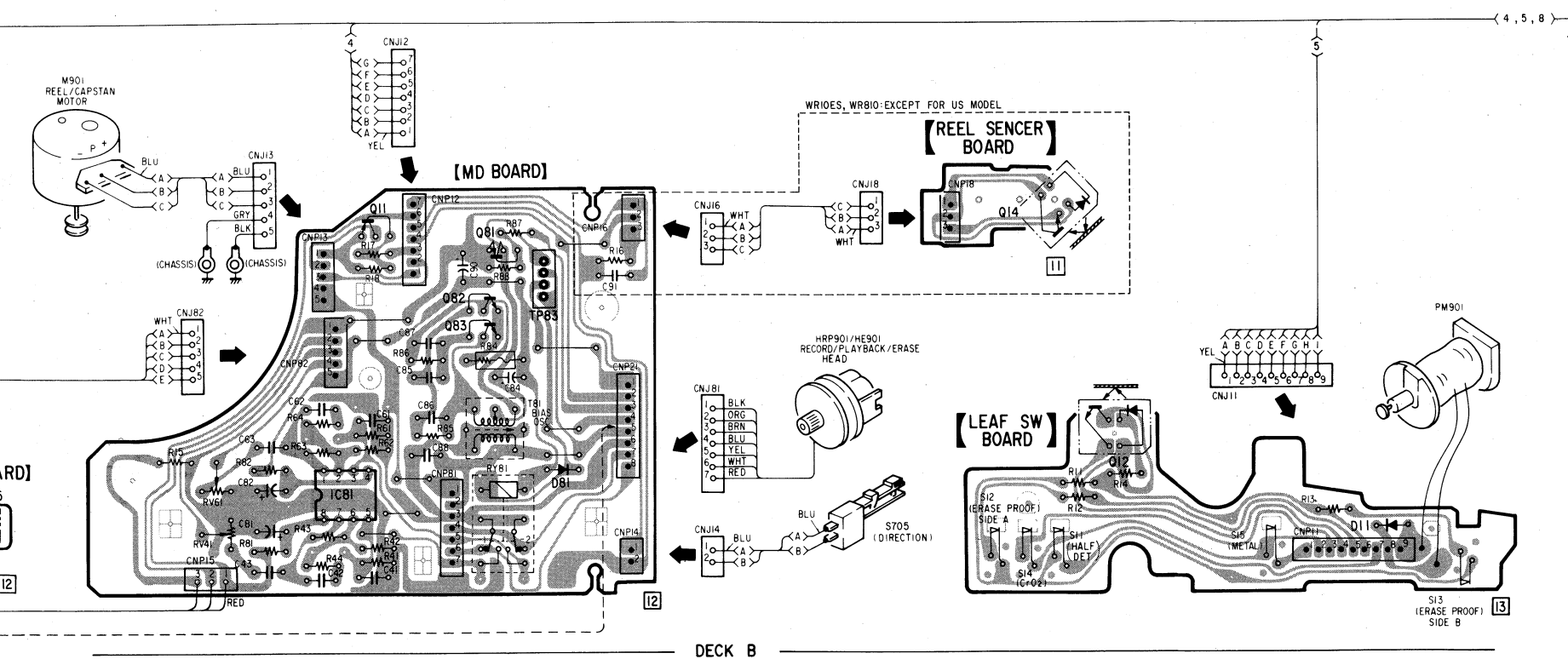
## ● SEMICONDUCTOR LOCATION

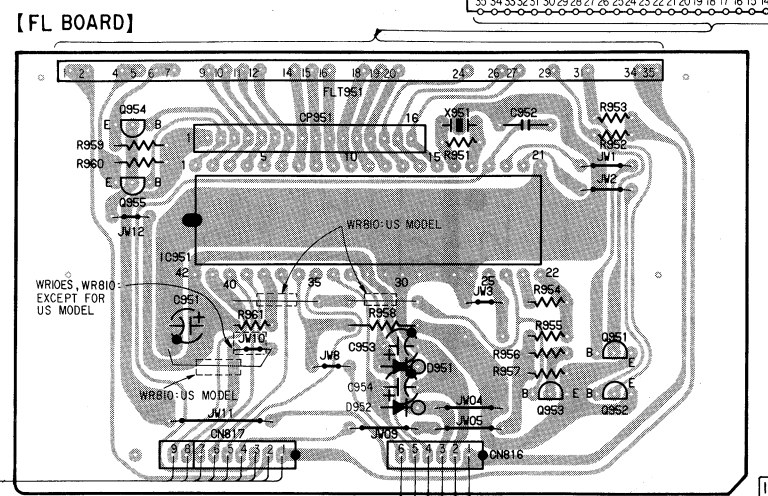
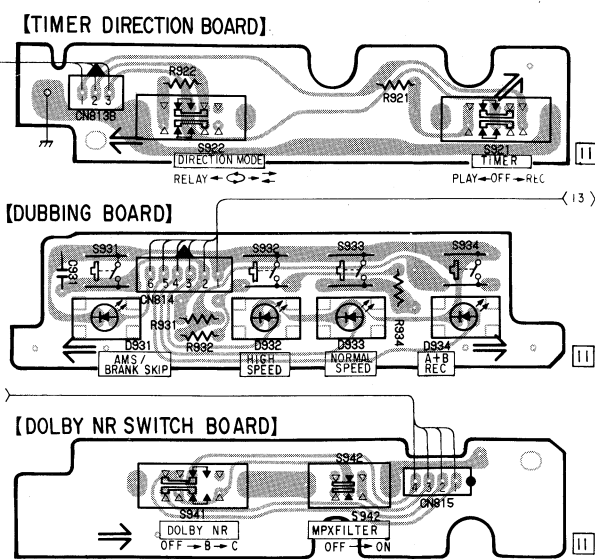
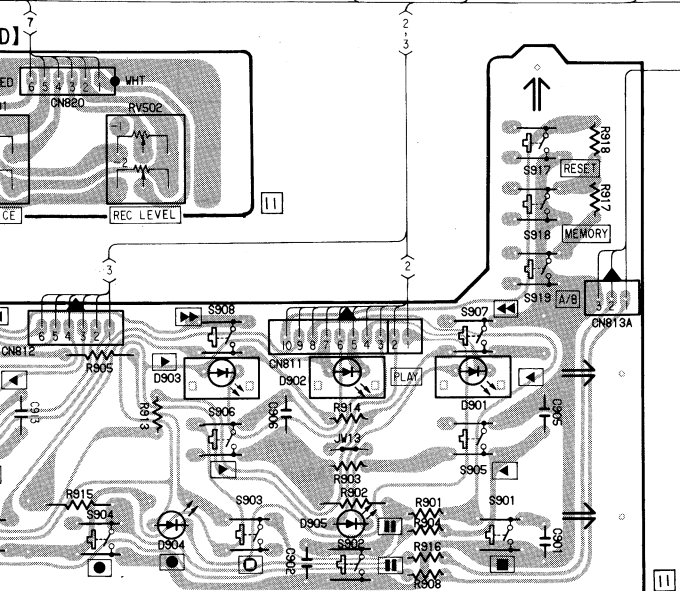
Ref. No.	Location	Ref. No.	Location
<b>DECK A</b>			
D11	E-15	IC501	C-23
D81	E-10	IC502	C-21
		IC503	C-18
IC21	D-3	IC504	B-18
IC81	E-8	IC505	D-18
IC91	E-3		
		IC506	F-20
Q11	C-8	IC507	F-21
Q12	E-14	IC508	E-20
Q14	C-13	IC509	E-21
Q15	E-6	IC510	B-25
Q21	D-4		
		IC701	C-28
Q81	C-9	IC801	E-27
Q82	D-9	IC901	I-19
Q83	D-9	IC951	J-30
<b>DECK B</b>			
D11	J-15	Q101	D-22
D81	J-10	Q102	D-22
		Q103	C-18
IC21	I-3	Q104	E-18
IC81	J-8	Q105	E-20
IC91	J-3		
		Q201	B-21
Q11	H-8	Q202	B-21
Q12	J-14	Q203	B-18
Q14	H-13	Q204	D-18
Q15	J-6	Q205	D-20
Q21	I-4		
		Q501	D-23
Q81	H-9	Q502	A-18
Q82	I-9	Q503	F-21
Q83	I-9	Q504	F-21
		Q505	F-21
		Q506	F-21
		Q507	C-25
D101	E-21	Q701	C-27
D201	D-21	Q702	B-27
D701	B-29	Q703	C-29
D702	B-29		
D703	B-29	Q704	C-29
		Q705	B-28
D704	B-29	Q706	B-28
D705	B-29	Q801	F-28
D706	B-30	Q802	F-28
D707	B-30		
D708	C-27	Q803	F-28
		Q804	F-28
D709	C-27	Q805	F-27
D710	B-28	Q806	F-27
D711	D-30	Q807	F-27
D712	B-28		
D713	B-30	Q808	F-27
		Q809	F-26
D714	C-30	Q810	E-26
D801	D-29	Q811	F-25
D802	D-29	Q812	F-25
D803	C-25		
D804	F-25	Q813	F-25
		Q814	F-25
D805	F-25	Q815	C-25
D806	E-24	Q816	D-27
D807	F-29	Q817	D-27
D808	D-30		
D809	D-30	Q818	E-25
		Q819	E-24
D810	E-23	Q820	E-25
D811	E-23	Q821	E-29
D901	J-23	Q822	E-29
D902	J-22		
D903	J-21	Q823	E-29
		Q824	D-30
D904	K-21	Q825	E-29
D905	K-22	Q901	H-17
D906	J-20	Q951	J-32
D907	J-19		
D908	J-18	Q952	K-32
D909	K-18	Q953	K-31
D910	K-19	Q954	I-29
D931	J-25	Q955	I-29
D932	J-26		
D933	J-26		
D934	J-27		
D951	J-31		
D952	K-30		

4-1. PRINTED WIRING BOARDS • See page 20 for Semiconductor Lead Layouts. • See page 21 for Circuit Boards Location.

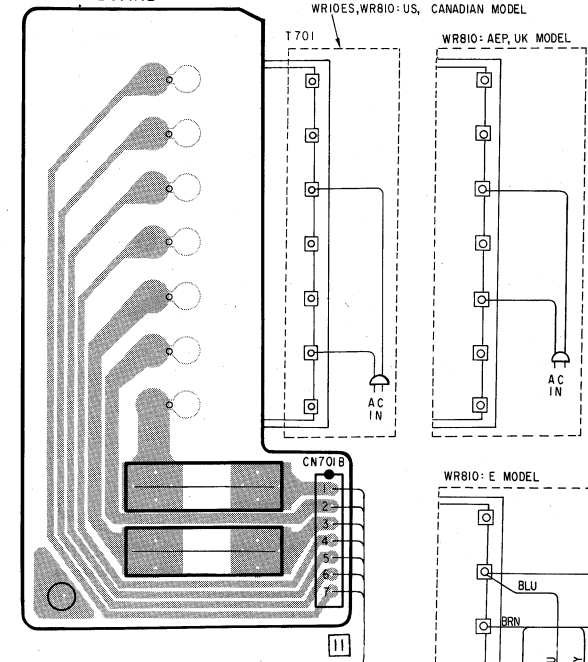




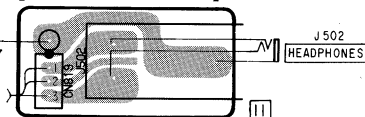




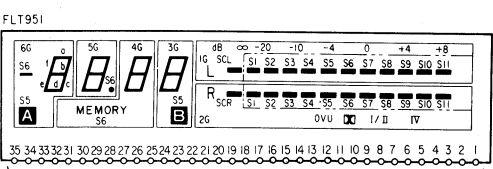
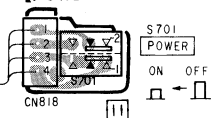
**【POWER TRANSFORMER】**  
**BOARD**



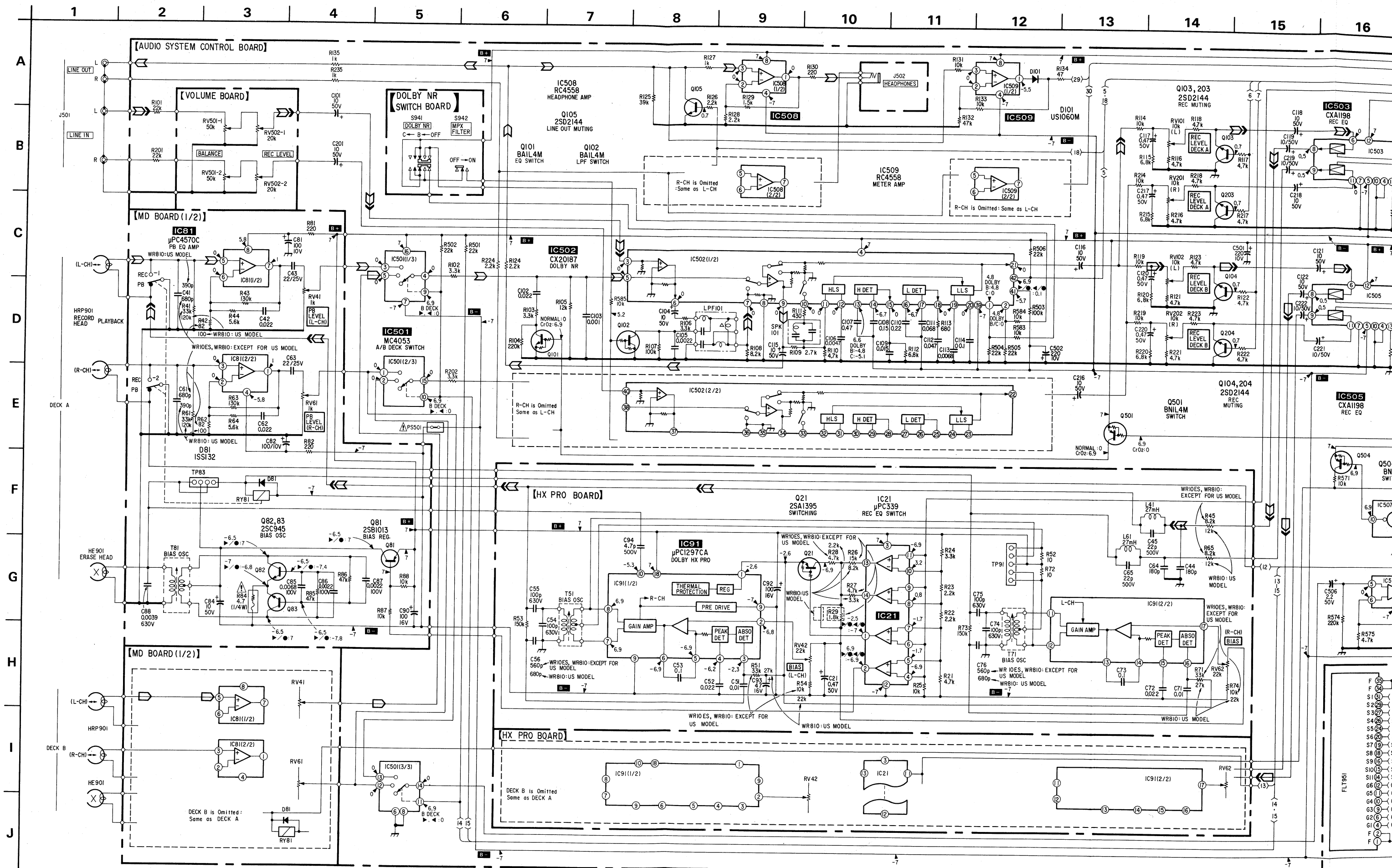
**[HEADPHONE BOARD]**

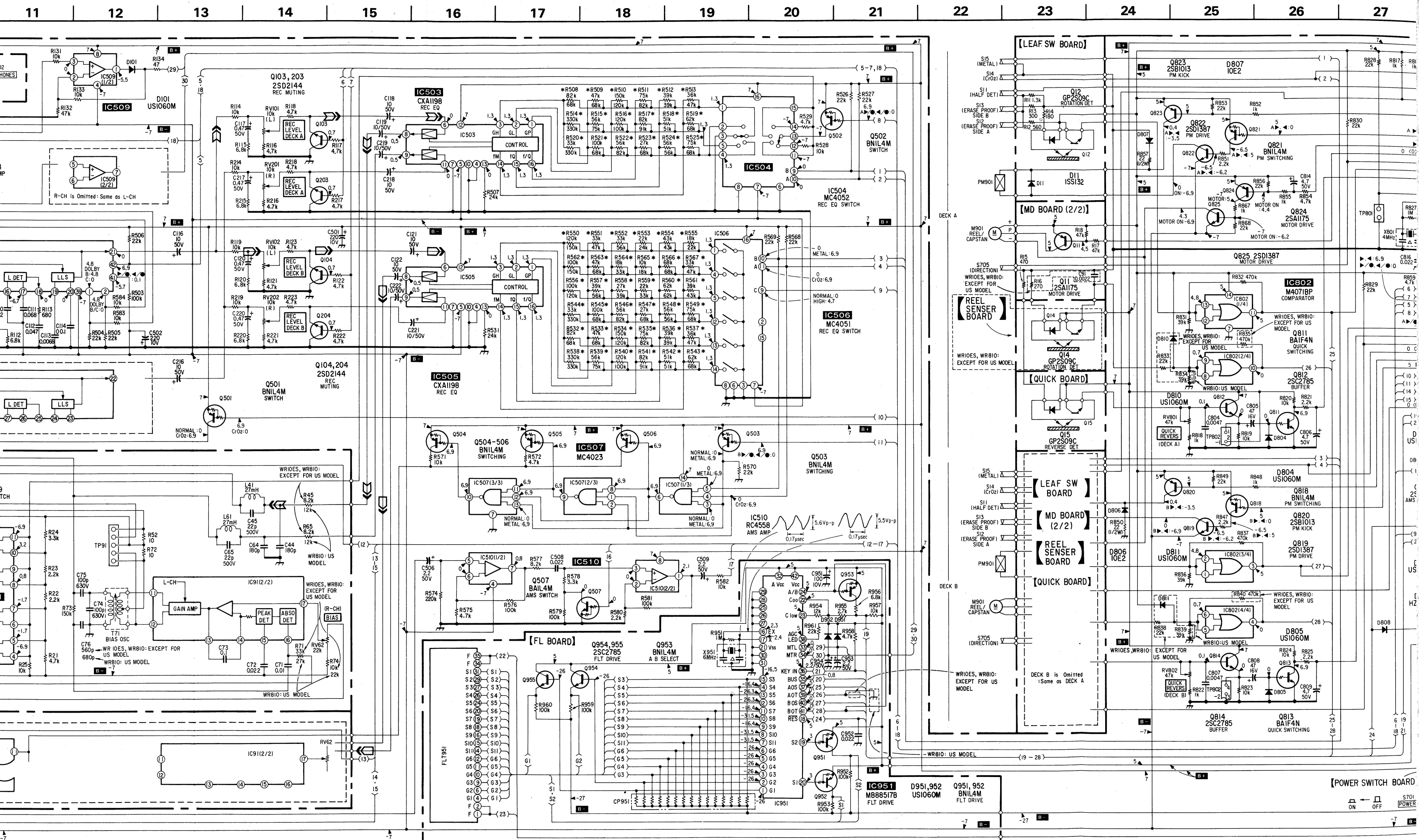


**【POWER SWITCH BOARD】**

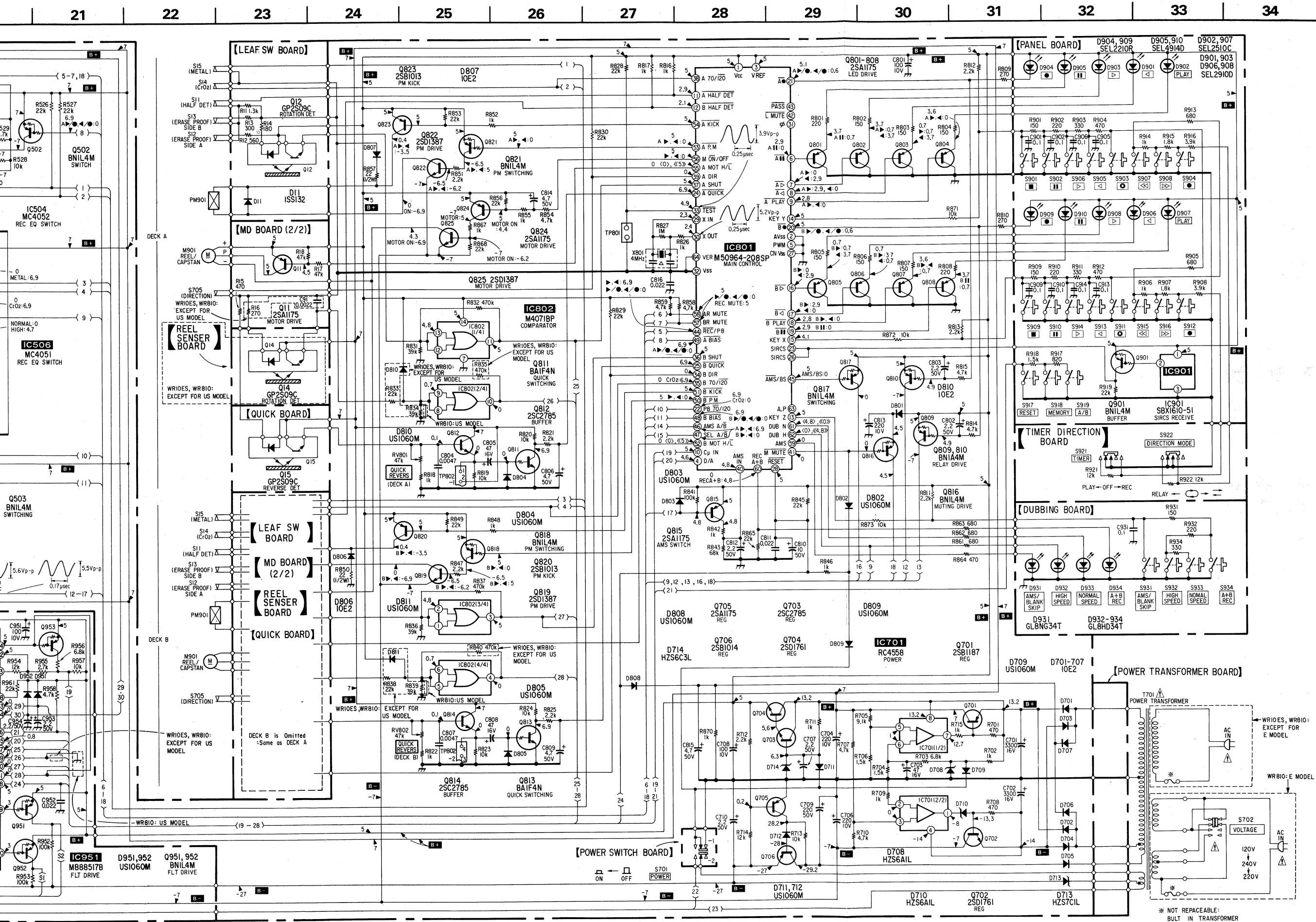






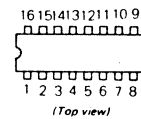






### 4.3. SEMICONDUCTOR LEAD LAYOUTS

CXA1198AP  
MC14053BCP  
TC4051BPHB  
TC4052BP



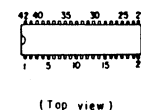
BA1L4M  
2SC2785  
2SC1175-HFE



2SD1761-E



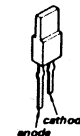
CX20187  
MB88517B



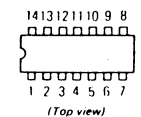
DTA114ES  
DTA144ES  
DTC124XS  
2SD2144S-V



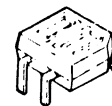
GL8HD34T  
GL8NG34T



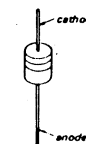
LM339N  
M4023BP  
TC4071BP



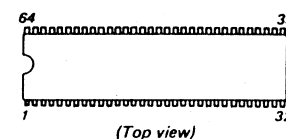
GP-2S09-C



HZS6A1L  
HZS6C3L  
HZS7C1L  
US1060M



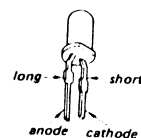
M50964-208SP



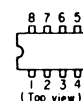
2SB1013  
2SC945-P  
2SD1387



SEL2210R  
TLY124



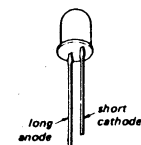
RC4558P  
μPC4570C-1



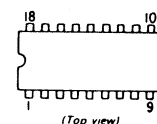
2SB1014



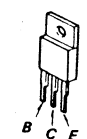
SEL2510C  
SEL4914D



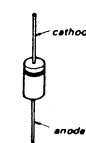
μPC1297CA



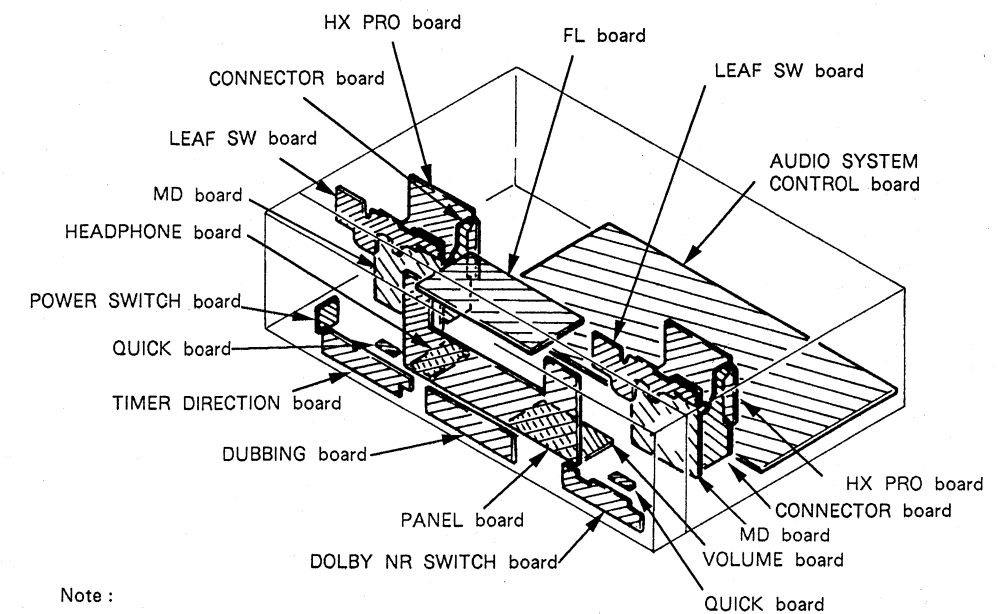
2SB1187-F



1SS132  
10E2N



### 4.4. CIRCUIT BOARDS LOCATION



Note :

- \* : R508-R525  
R532-R567

82k ← UPPER COLUMN : WR10ES,  
WR810 : except for US model  
68k ← LOWER COLUMN : WR810 : US model

- All capacitors are in  $\mu F$  unless otherwise noted.  $pF : \mu \mu F$   
50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}W$  or less unless otherwise specified.
- $\Delta$  : internal component.
- $\text{---} \text{---} \text{---}$  : fusible resistor.

Note:

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Note:

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- B+** : B+ Line
- B-** : B- Line
- $\square$  : adjustment for repair.
- Voltages and waveforms are dc with respect to ground under no-signal conditions.  
no mark : STOP  
< > : NORMAL SPEED DUBBING  
< > : HIGH SPEED DUBBING  
▶ : FWD ◀ : REV ■ : STOP  
▶▶ : FF ◀◀ : REW ● : REC
- Voltages are taken with a VOM (Input impedance 10M  $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Signal path.  
◁ ▷ : PB (DECK A)  
◁ ▷ : REC (DECK A)  
◁ ▷ : PB (DECK B)  
◁ ▷ : REC (DECK B)

#### 4-5. M50964-206SP (IC801)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
1	Vcc			Power supply pin
2	AVss			Ground pin
3	VREF			Power supply pin
4	D/A	C μ OUT	O	Data output to microcomputer of counter
5	PWM			Not used
6	P63	A II	O	Output for LED (L: light on)
7	P62	A ▷	O	Output for LED (L: light on)
8	P61	A ◁	O	Output for LED (L: light on)
9	P60	A PLAY	O	Output for LED (L: light on)
10	AN7	C μ IN	I	Data input from microcomputer of counter
11	AN6	A HALF DET	I	Detect the tab for recording proof on the deck A (L: tab being H: tab removed)
12	AN5	B HALF DET	I	Detect the tab for recording proof on the deck B (L: tab being H: tab removed)
13	AN4	KEY Z	I	Input from operation switches,
14	AN3	KEY Y	I	Input from operation switches,
15	AN2	KEY X	I	Input from operation switches,
16	P41	B ▷	O	Output for LED (L: light on)
17	P40	B ◁	O	Output for LED (L: light on)
18	P37	B PLAY	O	Output for LED (L: light on)
19	P36	B II	O	Output for LED (L: light on)
20	P35	B ●	O	Output for LED (L: light on)
21	P34	A ●	O	Output for LED (L: light on)
22	P33	PB	O	Output for playback equalizer switching to 70 μS.
23	P32/INT2	SIRCS	I	SIRCS signal is input
24	P31	A QUICK	O	Output for quick reverse to deck A
25	P30	B QUICK	O	Output for quick reverse to deck B
26	INT1	SIRCS	I	SIRCS signal is input
27	CN Vss			Ground pin
28	RESET		I	Reset signal is input
29	X IN		I	4.00MHz oscillation signal is input
30	X OUT		O	4.00MHz oscillation signal is output
31	φ			Not used
32	Vss			Ground pin
33	P57	TEST	I	Input for test mode
34	P56	B DIR	I	Input from direction switch of deck B
35	P55	B 70/120	I	Input from 70/120 μS switch of deck B
36	P54	B SHUT	I	Rotation detect of reel table of deck B (the mechanism is shut off after one second from no signal change)
37	P53	A SHUT	I	Rotation detect of reel table of deck A (the mechanism is shut off after one second from no signal change)
38	P52	A 70/120	I	Input from 70/120 μS switch of deck A
39	P51	A DIR	I	Input from direction switch of deck A
40	P50	AMS IN	I	AMS signal is input
41	P17	M MUTE	O	Output for meter muting (L: muting)
42	P16	L MUTE	O	Output for line muting (not used)

No.	PIN NAME	SIGNAL	I/O	FUNCTION
43	P15	PASS	O	Output for switching pass amp (not used)
44	P14	REC/PB	O	Output to switch record/playback (L: record)
45	P13	AMS/BS	O	Output to switch characteristic of AMS/BS amp
46	P12	AMS A/B	O	Output to switch deck A or deck B of AMS/BS amp (L: deck B)
47	P11	SEL A/B	O	Output to switch deck A or deck B of AMS/BS amp (L: deck B)
48	P10	B BIAS	O	Output for switching record bias of deck B
49	P07	A BIAS	O	Output for switching record bias of deck A
50	P06	B PM	O	Output to hold the solenoid of deck B
51	P05	B KICK	O	Output to kick the solenoid of deck B
52	P04	BM H/L	O	Output to switch high speed/normal speed of capstan motor on deck B (H: high speed dubbing or FF/REW)
53	P03	A PM	O	Output to hold the solenoid of deck A
54	P02	A KICK	O	Output to kick the solenoid of deck A
55	P01	AM H/L	O	Output to switch high speed/normal speed of capstan motor on deck A (H: high speed dubbing or FF/REW)
56	P00	M ON/OFF	O	Output for ON/OFF of capstan motor (H: STOP)
57	P27	B R MUTE	O	Output to mute record signal of deck B (H: muting)
58	P26	A R MUTE	O	Output to mute record signal of deck A (H: muting)
59	P25	AMS	O	Output for LED (H: light on)
60	P24	REC A+B	O	Output for LED (H: light on)
61	P23	DUB N	O	Output for LED (H: light on)
62	P22	DUB H	O	Output for LED (H: light on)
63	P21	A.P	O	Not used
64	P20	VER	I	Terminal of Version setting (this set is L)

#### TEST MODE

This set is into TEST MODE according to make L of 33 pin.

1. Source monitor  
Cancel the muting of line signal while recording.
2. High speed playback  
Keep on pressing HIGH SPEED (DUBBING) button and the set playback in high speed while recording.
3. RECORD MEMORY STOP  
In advance, set the DIRECTION MODE switch to ➡ and the set playback after goingback to point of starting record by each operation ◀, ▶/◀ keys.
4. LED display of slide switch  
Display the switch positions DIRECTION MODE switch and TIMER switch by LED while deck B is in II mode.

switch	position	LED
DIRECTION MODE	➡	deck A ◀
	⬅	deck A PLAY
TIMER	REC	deck B ◀
	OFF	deck B PLAY
	PLAY	deck B ▶

5. AGC gain check  
AGC gain is maximum in recording with DIRECTION MODE switch to ➡.

## SECTION 5 EXPLODED VIEWS

#### NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

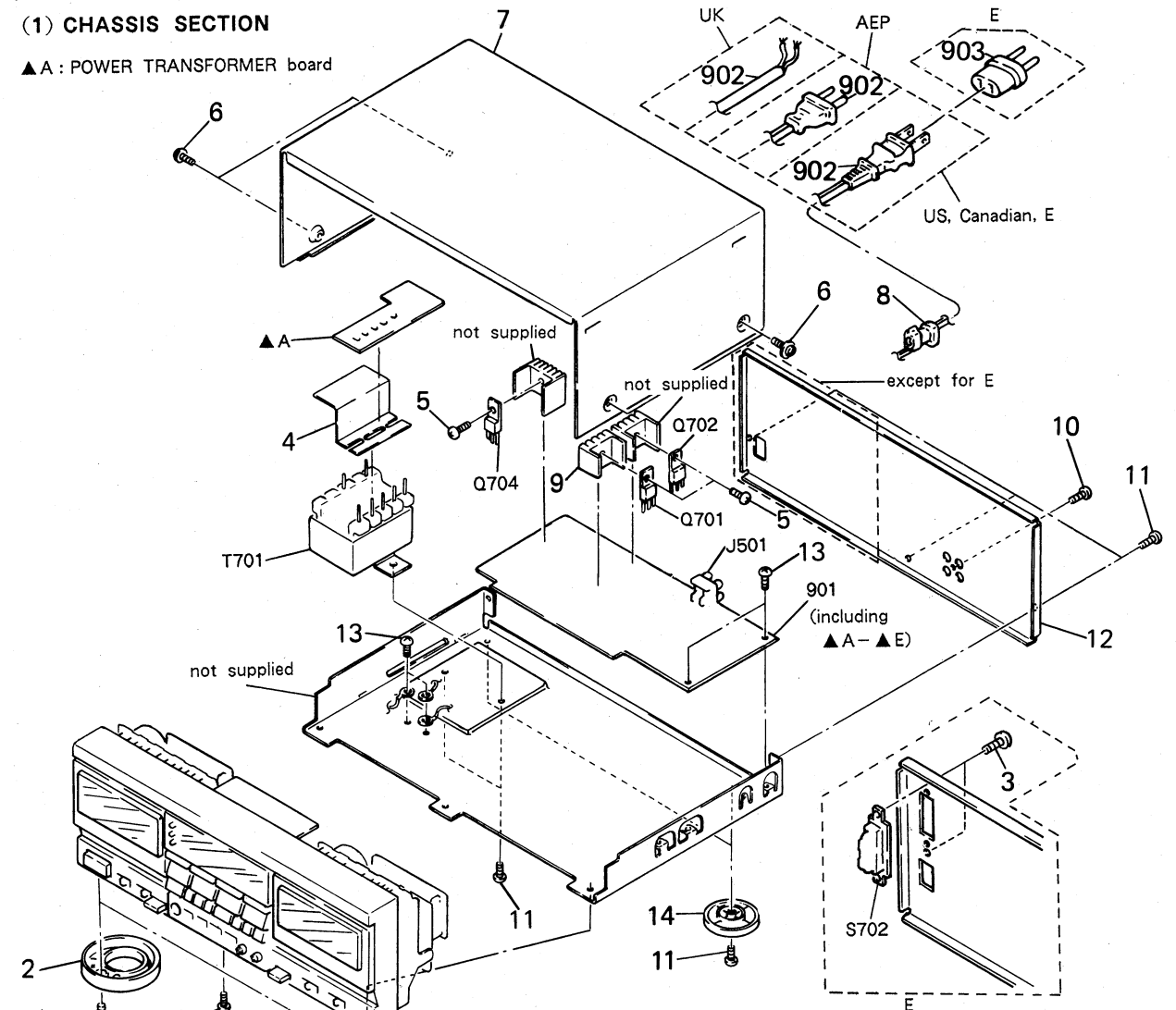
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts  
Example:  
(RED) ... KNOB, BALANCE (WHITE)  
↑ Cabinet's Color      ↑ Parts' Color

The components identified by mark ▲ or dotted line with mark ▲ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

#### (1) CHASSIS SECTION

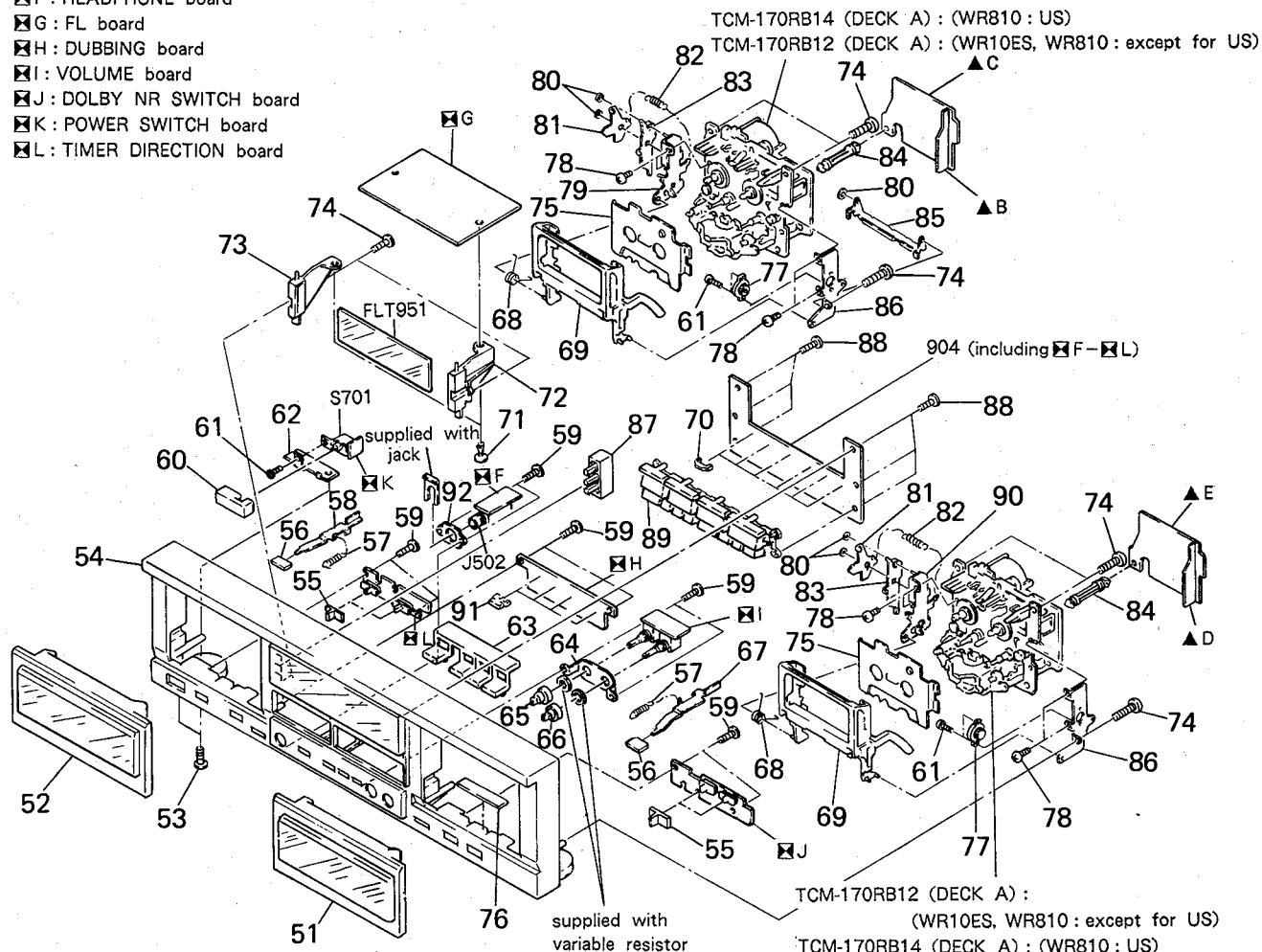
▲ A: POWER TRANSFORMER board



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
1	7-682-549-04	SCREW +BVTT 3X10 (S)		13	7-685-871-01	SCREW +BVTT 3X6	
2	3-332-580-01	(WR10ES,WR810:AEP,UK)...COVER (FOOT)		14	X-4885-935-1	(WR10ES,WR810:AEP,UK)...FOOT ASSY	
	3-332-580-11	(WR810:US,Canadian,E)...COVER (FOOT)			X-4911-201-1	(WR810:US,Canadian,E)...FOOT ASSY	
3	7-685-534-19	SCREW +BTP 2.6X8 TYPE 2 N-S		901	*A-2006-095-A	(WR10ES,WR810:EXCEPT FOR US)	
4	*3-337-136-11	COVER, TRANSFORMER SAFETY			*A-2006-110-A	(WR810:US)...MOUNTED PCB, SYSTEM CONTROL	
5	7-685-645-79	SCREW +BVTP 3X6 TYPE2		902	▲.1-551-188-XX	(E).....CORD, POWER	
6	3-704-366-01	SCREW (CASE) (M3X8)			▲.1-551-506-XX	(US,Canadian)...CORD, POWER	
7	3-332-578-71	CASE			▲.1-555-795-00	(AEP)...CORD, POWER, EULO PLUG	
8	3-703-244-00	(AEP,UK)...BUSHING (2104), CORD			▲.1-556-035-00	(UK).....CORD, POWER	
	3-703-571-00	(US,Canadian,E) ...BUSHING (S)(4516), CORD		903	▲.1-526-565-00	(E)....AC PLUG ADAPTOR	
9	*4-363-146-21	HEAT SINK, V.OUT		J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)	
10	7-621-849-00	SCREW, TAPPING		Q701	8-729-920-91	TRANSISTOR 2SB1187-F	
11	7-682-548-04	SCREW +BVTT 3X8 (S)		Q702	8-729-808-76	TRANSISTOR 2SD1761-E	
				Q704	8-729-808-76	TRANSISTOR 2SD1761-E	
12	*3-349-035-21	(AEP).....PANEL, BACK		S702	▲.1-570-307-11	(E)...SWITCH, VOLTAGE CHANGE (VOLTAGE)	
	*3-349-035-31	(E).....PANEL, BACK			▲.1-449-460-11	(AEP,UK).....TRANSFORMER, POWER	
	*3-349-035-61	(WR10ES).....PANEL, BACK		T701	▲.1-449-461-11	(E).....TRANSFORMER, POWER	
	*3-349-035-41	(WR810:US,Canadian)...PANEL, BACK		T701	▲.1-449-614-11	(US,Canadian)...TRANSFORMER, POWER	
	*3-349-035-71	(UK).....PANEL, BACK					

## (2) FRONT PANEL SECTION

- ▲B: CONNECTOR board (DECK A)
- ▲C: HX PRO board (DECK A)
- ▲D: CONNECTOR board (DECK B)
- ▲E: HX PRO board (DECK B)
- ☒F: HEADPHONE board
- ☒G: FL board
- ☒H: DUBBING board
- ☒I: VOLUME board
- ☒J: DOLBY NR SWITCH board
- ☒K: POWER SWITCH board
- ☒L: TIMER DIRECTION board

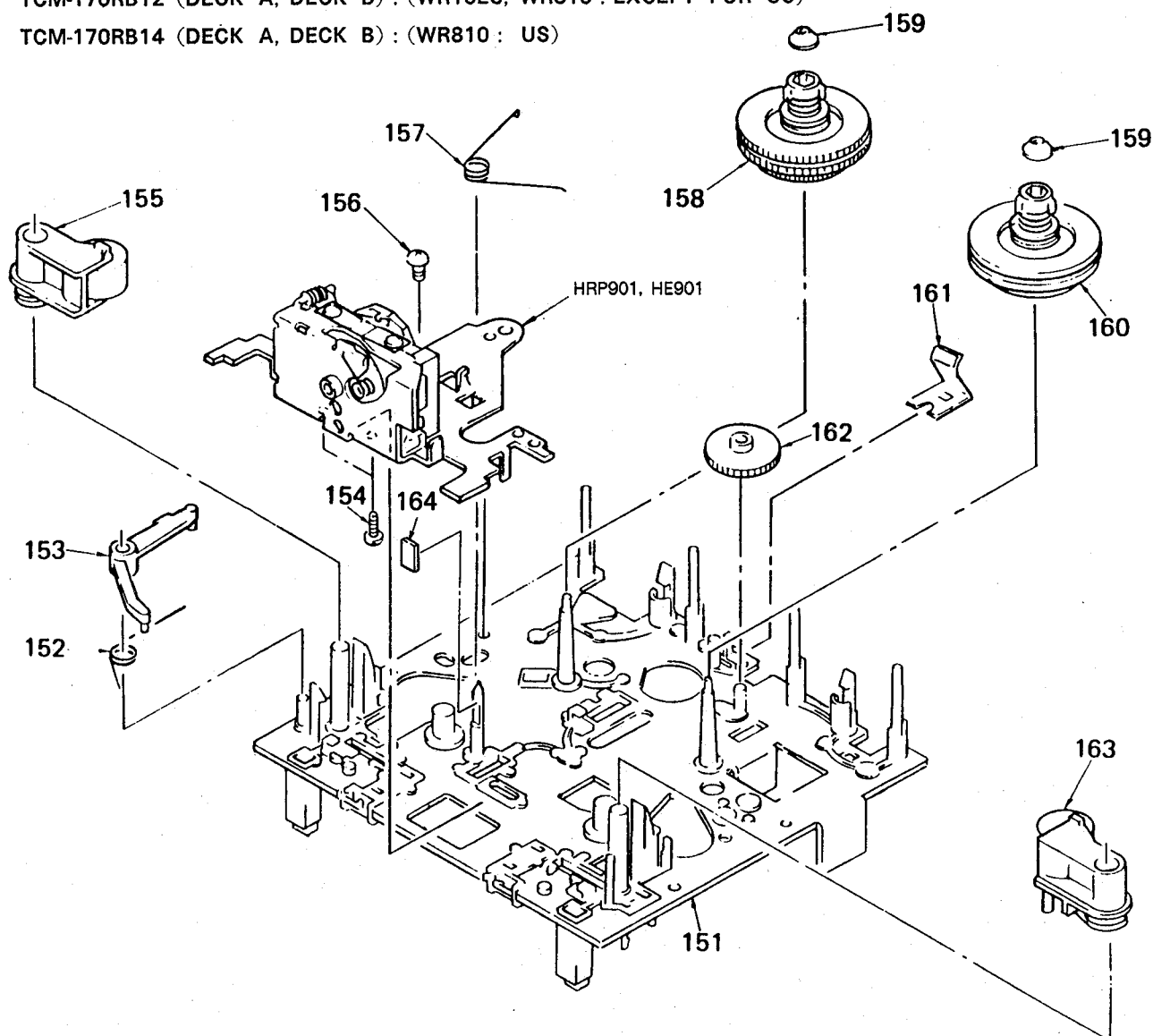


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
51	X-3340-144-1 X-3340-168-1 X-3340-170-1	(WR10ES).....LID (B) ASSY, CASSETTE (WR810:US).....LID (B) ASSY, CASSETTE (WR810:EXCEPT FOR US) .....LID (B) ASSY, CASSETTE		69	X-3332-482-1	HOLDER ASSY, CASSETTE	
52	X-3340-134-1 X-3340-143-1 X-3340-167-1	(WR810:EXCEPT FOR US) .....LID (A) ASSY, CASSETTE (WR10ES).....LID (A) ASSY, CASSETTE (WR810:US).....LID (A) ASSY, CASSETTE		70	*3-346-339-01	HOLDER	
53	7-621-775-10	SCREW +B 2.6X4		71	4-812-134-00	RIVET NYLON, 3.5	
54	X-3340-160-2 X-3340-169-1 X-3340-171-1 X-3340-172-1	(WR10ES).....PANEL ASSY, FRONT (WR810:US).....PANEL ASSY, FRONT (WR810:AEP,UK,E)...PANEL ASSY, FRONT (WR810:Canadian)...PANEL ASSY, FRONT		72	*3-343-607-01	HOLDER (RIGHT), FL TUBE	
55	3-323-415-41	KNOB, SWITCH TIMER		73	*3-343-608-01	HOLDER (LEFT), FL TUBE	
56	3-340-188-01	BUTTON (EJECT)		74	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S	
57	4-885-182-11	SPRING, TENSION		75	*3-340-123-01	RETAINER, CASSETTE	
58	*3-340-193-01	SLIDER (EJECT LEFT)		76	3-831-441-XX	CUSHION (B), CABINET	
59	7-685-133-19	SCREW +BTP 2.6X6 TYPE2 N-S		77	3-319-224-31	DAMPER, SMALL	
60	3-340-168-01	BUTTON (POWER SW)		78	7-621-770-87	SCREW +BVT 2.6X5 (S)	
61	7-621-255-15	SCREW +P 2X3		79	*X-3332-486-1	BRACKET ASSY (A)	
62	*3-340-178-01	BRACKET (POWER SW)		80	3-558-708-21	WASHER, STOPPER	
63	*3-346-308-01	BUTTON (DUBBING)		81	*3-343-449-01	LEVER (LOCK LEVER)	
64	*3-340-196-01	BRACKET (VOLUME)		82	3-312-432-00	SPRING, TENSION	
65	3-304-929-11	KNOB, HEADPHONE		83	*3-346-306-01	LEVER (EJECT)	
66	3-304-929-21	KNOB, HEADPHONE		84	*3-682-419-21	HOLDER, P.C.B	
67	*3-340-194-01	SLIDER (EJECT RIGHT)		85	*3-346-307-01	JOINT	
68	3-346-336-01	SPRING, TORSION		86	*3-346-305-01	BRACKET (DAMPER)	
				87	3-346-309-01	BUTTON (COUNTER)	
				88	7-685-135-19	SCREW +BTP 2.6X10 TYPE2 N-S	
				89	X-3340-135-1	BUTTON ASSY, CONTROL	
				90	*X-3332-487-1	BRACKET ASSY (B)	
				91	*3-337-108-01	HOLDER, LED	
				92	*3-346-303-01	BRACKET (HEADPHONE)	
				904	*1-630-291-11	PC BOARD, PANEL	
				FLT951	1-519-447-11	INDICATOR TUBE, FLUORESCENT	
				J502	1-507-796-71	JACK (HEADPHONES)	
				S701	1-553-336-21	SWITCH, PUSH	

## (3) MECHANISM SECTION 1

TCM-170RB12 (DECK A, DECK B) : (WR10ES, WR810 : EXCEPT FOR US)

TCM-170RB14 (DECK A, DECK B) : (WR810 : US)

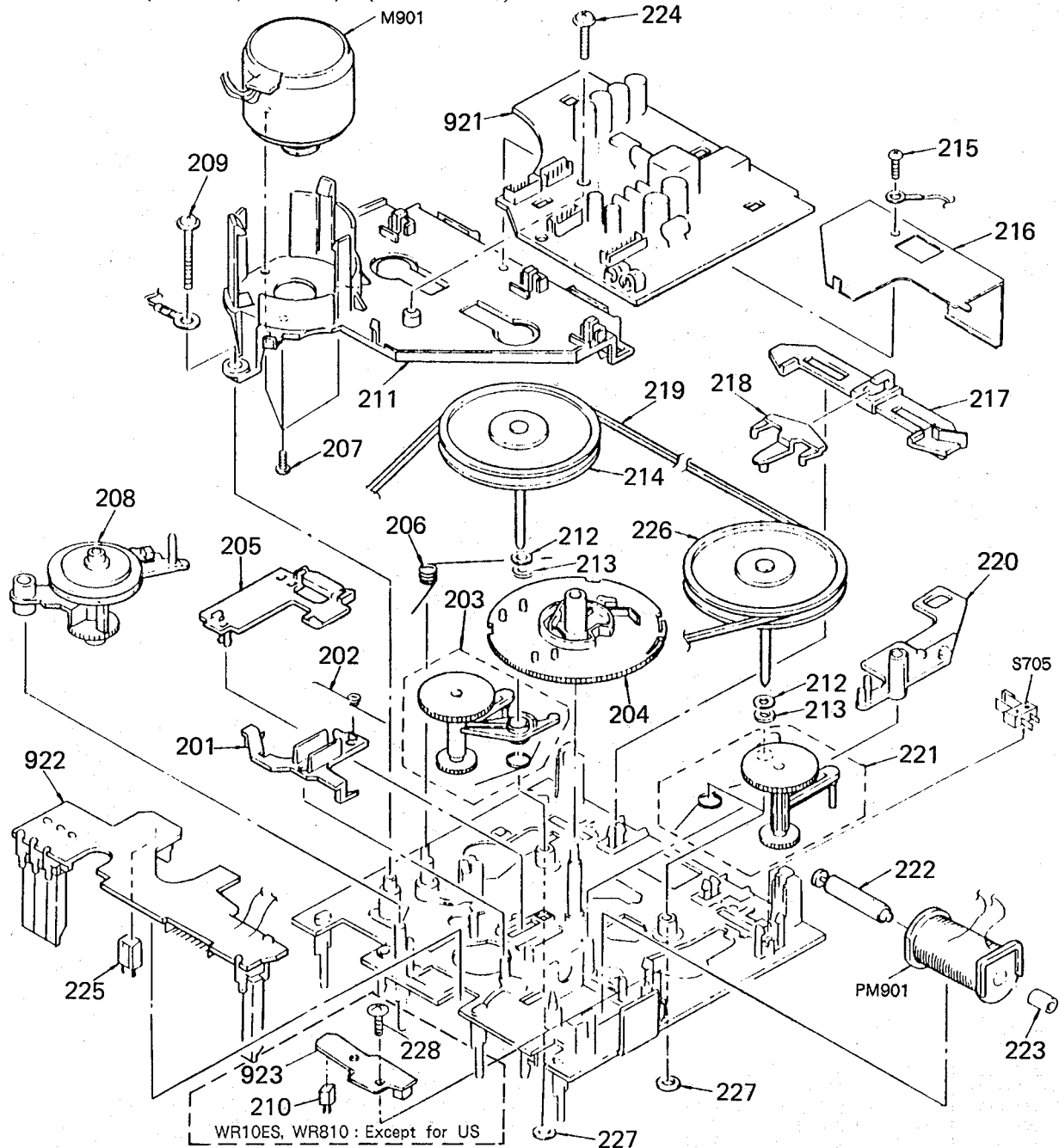


No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
151	*X-3343-418-1	CHASSIS ASSY, MECHANICAL		161	3-343-420-01	SPRING, LEAF	
152	3-343-477-01	SPRING, TORSION (EJECT SAFTY)		162	3-343-411-01	GEAR (FF GEAR)	
153	*3-343-476-01	LEVER (EJECT SAFETY LEVER)		163	X-3343-402-1	LEVER (PINCH LEVER FWD) ASSY	
154	7-685-102-19	SCREW +P 2X4 NON-SLIT TYPE 2		164	*3-343-481-01	(WR10ES,WR810:EXCEPT FOR US) ...SHEET (REFLECTOR)	
155	X-3343-403-1	LEVER (PINCH LEVER REV) ASSY					
156	7-621-773-86	SCREW +BVTT 2.6X4 (S)		HE901	A-2108-043-C	(WR10ES,WR810:EXCEPT FOR US) ...CHASSIS ASSY, HEAD	
157	3-343-401-01	SPRING, TORSION		HRP901			
158	X-3343-415-1	TABEL (REV) ASSY, REEL					
159	3-343-439-01	CAP (REEL TABLE)		HE901	A-2108-044-C	(WR810)....CHASSIS ASSY, HEAD	
160	X-3343-401-1	TABEL ASSY, REEL		HRP901			

(4) MECHANISM SECTION 2

TCM-170RB12 (DECK A, DECK B) : (WR10ES, WR810 : EXCEPT FOR US)

TCM-170RB14 (DECK A, DECK B) : (WR810 : US)



No.	Part No.	Description	Remarks	No.	Part No.	Description	Remarks
201	3-343-453-01	SLIDER (BRAKE PLATE)		219	3-343-426-02	BELT (CAPSTAN BELT SQUARE)	
202	3-343-429-01	SPRING, TORSION		220	3-343-493-01	LEVER (PM LEVER)	
203	X-3343-406-1	LEVER (TU ARM REV) ASSY		221	X-3343-405-1	LEVER (TU ARM FWD) ASSY	
204	3-343-470-01	GEAR (CAM GEAR)		222	*3-343-425-01	ARBOR(MOVABLE IRON ARBOR),IRON	
205	*3-343-461-01	SLIDER		223	*3-343-424-01	ARBOR (FIXED IRON ARBOR), IRON	
206	3-343-430-01	SPRING, TORSION		224	3-343-404-01	SCREW (PTPWH 2X10)	
207	7-627-556-28	SCREW +P 2.6X3.5		225	*3-343-419-01	HOLDER (S SENSOR A)	
208	X-3343-414-1	LAVER (FR ARM) ASSY		226	X-3343-431-1	FLYWHEEL (REV) COMPLETE ASSY	
209	3-343-403-01	SCREW (PTTWH 2X18)		227	3-343-473-01	WASHER, NYLON	
210	*3-343-491-01	(WR10ES,WR810:EXCEPT FOR US) ...HOLDER (S SENSOR B)		228	7-685-103-19	(WR10ES,WR810:EXCEPT FOR US) ...SCREW + PTPWH (2X5)	
211	*X-3343-407-1	BASE (THRUST RETAINER) ASSY		921	*1-629-211-11	PC BOARD, MD (B)	
212	4-605-835-11	WASHER (2.6), POLYSLIDER		922	*1-624-148-11	PC BOARD, LEAF SW	
213	3-307-482-00	WASHER, LUMILER		923	*1-628-656-11	(WR10ES,WR810:EXCEPT FOR US) ...PC BOARD, REEL SENSOR	
214	X-3343-429-1	FLYWHEEL COMPLETE ASSY					
215	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT		M901	X-3343-408-1	MOTOR ASSY	
216	3-343-480-01	PLATE, SHIELD		PM901	1-454-456-11	SOLENOID, PLUNGER	
217	*3-343-457-01	SLIDER (REVERSE SLIDER)		S705	1-571-028-11	SWITCH, LEAF (REC SW)	
218	3-343-462-01	LEVER					

## SECTION 6

### ELECTRICAL PARTS LIST

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

**CAPACITORS:**MF:  $\mu$ F, PF:  $\mu$ F.**RESISTORS**

- All resistors are in ohms.
- F: nonflammable

**COILS**

- MMH: mH, UH:  $\mu$ H

**SEMICONDUCTORS**In each case, U:  $\mu$ , for example:
 UA....:  $\mu$ A...., UPA....:  $\mu$ PA....,  
 UPC....:  $\mu$ PC, UPD....:  $\mu$ PD....

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description	Ref.No.	Part No.	Description
901	*A-2006-095-A	(WR10ES,WR810:EXCEPT FOR US) ...MOUNTED PCB, SYSTEM CONTROL	C81	1-124-443-00	ELECT 100MF 20% 10V
	*A-2006-110-A	(WR810:US)...MOUNTED PCB, SYSTEM CONTROL	C82	1-124-443-00	ELECT 100MF 20% 10V
902	$\Delta$ 1-551-188-XX	(E)....CORD, POWER	C84	1-123-875-11	ELECT 10MF 20% 50V
	$\Delta$ 1-551-506-XX	(US,Canadian)...CORD, POWER	C85	1-130-856-00	FILM 0.0068MF 5% 100V
	$\Delta$ 1-555-795-00	(AEP)...CORD, POWER, EULO PLUG	C86	1-136-230-00	FILM 0.0022MF 5% 100V
	$\Delta$ 1-556-035-00	(UK)....CORD, POWER	C87	1-136-230-00	FILM 0.0022MF 5% 100V
903	$\Delta$ 1-526-565-00	(E)....AC PLUG ADAPTOR	C88	1-136-558-11	FILM 0.0039MF 5% 630V
904	*1-630-291-11	PC BOARD, PANEL	C90	1-126-101-11	ELECT 100MF 20% 16V
921	*1-629-211-11	PC BOARD, MD (B)	C91	1-161-375-00	(WR10ES,WR810:EXCEPT FOR US) ...CERAMIC 0.0022MF 30% 16V
922	*1-624-148-11	PC BOARD, LEAF SW	C92	1-126-101-11	ELECT 100MF 20% 16V
923	*1-628-656-11	(WR10ES,WR810:EXCEPT FOR US) ...PC BOARD, REEL SENSOR	C93	1-124-477-11	ELECT 47MF 20% 16V
C21	1-124-902-00	ELECT 0.47MF 20% 50V	C94	1-107-046-00	MICA 4.7PF 0.5PF 500V
C41	1-110-342-11	(WR810:US)...MYLAR 390PF 5% 50V	C101	1-123-875-11	ELECT 10MF 20% 50V
C41	1-130-469-00	(WR10ES,WR810:EXCEPT FOR US) ...MYLAR 680PF 5% 50V	C102	1-136-157-00	FILM 0.022MF 5% 50V
C42	1-136-157-00	FILM 0.022MF 5% 50V	C103	1-162-294-31	CERAMIC 0.001MF 10% 50V
C43	1-124-282-00	ELECT 22MF 20% 25V	C104	1-123-875-11	ELECT 10MF 20% 50V
C44	1-162-285-31	CERAMIC 180PF 10% 50V	C105	1-161-375-00	CERAMIC 0.0022MF 30% 16V
C45	1-107-210-00	MICA 22PF 5% 500V	C106	1-130-479-00	MYLAR 0.0047MF 5% 50V
C51	1-136-153-00	FILM 0.01MF 5% 50V	C107	1-136-173-00	FILM 0.47MF 5% 50V
C52	1-136-157-00	FILM 0.022MF 5% 50V	C108	1-136-167-00	FILM 0.15MF 5% 50V
C53	1-136-165-00	FILM 0.1MF 5% 50V	C109	1-136-155-00	FILM 0.015MF 5% 50V
C54	1-136-433-11	FILM 100PF 5% 630V	C110	1-136-169-00	FILM 0.22MF 5% 50V
C55	1-136-433-11	FILM 100PF 5% 630V	C111	1-136-163-00	FILM 0.068MF 5% 50V
C56	1-130-468-00	(WR10ES,WR810:EXCEPT FOR US) ...MYLAR 560PF 5% 50V	C112	1-136-161-00	FILM 0.047MF 5% 50V
C56	1-130-469-00	(WR810:US)...MYLAR 680PF 5% 50V	C113	1-130-481-00	MYLAR 0.0068MF 5% 50V
C61	1-110-342-11	(WR810:US)...MYLAR 390PF 5% 50V	C114	1-136-153-00	FILM 0.01MF 5% 50V
C61	1-130-469-00	(WR10ES,WR810:EXCEPT FOR US) ...MYLAR 680PF 5% 50V	C115	1-123-875-11	ELECT 10MF 20% 50V
C62	1-136-157-00	FILM 0.022MF 5% 50V	C116	1-123-875-11	ELECT 10MF 20% 50V
C63	1-124-282-00	ELECT 22MF 20% 25V	C117	1-124-902-00	ELECT 0.47MF 20% 50V
C64	1-162-285-31	CERAMIC 180PF 10% 50V	C118	1-123-875-11	ELECT 10MF 20% 50V
C65	1-107-210-00	MICA 22PF 5% 500V	C119	1-123-875-11	ELECT 10MF 20% 50V
C71	1-136-153-00	FILM 0.01MF 5% 50V	C120	1-124-902-00	ELECT 0.47MF 20% 50V
C72	1-136-157-00	FILM 0.022MF 5% 50V	C121	1-123-875-11	ELECT 10MF 20% 50V
C73	1-136-165-00	FILM 0.1MF 5% 50V	C122	1-123-875-11	ELECT 10MF 20% 50V
C74	1-136-433-11	FILM 100PF 5% 630V	C201	1-123-875-11	ELECT 10MF 20% 50V
C75	1-136-433-11	FILM 100PF 5% 630V	C202	1-136-157-00	FILM 0.022MF 5% 50V
C76	1-130-468-00	(WR10ES,WR810:EXCEPT FOR US) ...MYLAR 560PF 5% 50V	C203	1-162-294-31	CERAMIC 0.001MF 10% 50V
C76	1-130-469-00	(WR810:US)...MYLAR 680PF 5% 50V	C204	1-123-875-11	ELECT 10MF 20% 50V
			C205	1-161-375-00	CERAMIC 0.0022MF 30% 16V
			C206	1-130-479-00	MYLAR 0.0047MF 5% 50V
			C207	1-136-173-00	FILM 0.47MF 5% 50V
			C208	1-136-167-00	FILM 0.15MF 5% 50V
			C209	1-136-155-00	FILM 0.015MF 5% 50V
			C210	1-136-169-00	FILM 0.22MF 5% 50V
			C211	1-136-163-00	FILM 0.068MF 5% 50V



# TC-WR10ES/WR810

Ref.No.	Part No.	Description
C212	1-136-161-00	FILM 0.047MF 5% 50V
C213	1-130-481-00	MYLAR 0.0068MF 5% 50V
C214	1-136-153-00	FILM 0.01MF 5% 50V
C215	1-123-875-11	ELECT 10MF 20% 50V
C216	1-123-875-11	ELECT 10MF 20% 50V
C217	1-124-902-00	ELECT 0.47MF 20% 50V
C218	1-123-875-11	ELECT 10MF 20% 50V
C219	1-123-875-11	ELECT 10MF 20% 50V
C220	1-124-902-00	ELECT 0.47MF 20% 50V
C221	1-123-875-11	ELECT 10MF 20% 50V
C222	1-123-875-11	ELECT 10MF 20% 50V
C501	1-126-176-11	ELECT 220MF 20% 10V
C502	1-126-176-11	ELECT 220MF 20% 10V
C506	1-124-925-11	ELECT 2.2MF 20% 50V
C508	1-161-494-00	CERAMIC 0.022MF 25V
C509	1-124-925-11	ELECT 2.2MF 20% 50V
C701	1-124-887-00	ELECT 3300MF 20% 16V
C702	1-124-887-00	ELECT 3300MF 20% 16V
C703	1-124-477-11	ELECT 47MF 20% 16V
C704	1-126-176-11	ELECT 220MF 20% 10V
C706	1-126-176-11	ELECT 220MF 20% 10V
C707	1-124-925-11	ELECT 2.2MF 20% 50V
C708	1-124-443-00	ELECT 100MF 20% 10V
C709	1-124-911-11	ELECT 220MF 20% 50V
C710	1-124-925-11	ELECT 2.2MF 20% 50V
C801	1-124-443-00	ELECT 100MF 20% 10V
C802	1-124-925-11	ELECT 2.2MF 20% 50V
C803	1-124-925-11	ELECT 2.2MF 20% 50V
C804	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C805	1-124-477-11	ELECT 47MF 20% 16V
C806	1-124-927-11	ELECT 4.7MF 20% 50V
C807	1-161-377-00	CERAMIC 0.0047MF 30% 16V
C808	1-124-477-11	ELECT 47MF 20% 16V
C809	1-124-927-11	ELECT 4.7MF 20% 50V
C810	1-123-875-11	ELECT 10MF 20% 50V
C811	1-161-494-00	CERAMIC 0.022MF 25V
C812	1-124-925-11	ELECT 2.2MF 20% 50V
C813	1-126-176-11	ELECT 220MF 20% 10V
C814	1-124-927-11	ELECT 4.7MF 20% 50V
C815	1-124-927-11	ELECT 4.7MF 20% 50V
C816	1-161-494-00	CERAMIC 0.022MF 25V
C901	1-164-159-11	CERAMIC 0.1MF 50V
C902	1-164-159-11	CERAMIC 0.1MF 50V
C905	1-164-159-11	CERAMIC 0.1MF 50V
C906	1-164-159-11	CERAMIC 0.1MF 50V
C909	1-164-159-11	CERAMIC 0.1MF 50V
C910	1-164-159-11	CERAMIC 0.1MF 50V
C913	1-164-159-11	CERAMIC 0.1MF 50V
C914	1-164-159-11	CERAMIC 0.1MF 50V
C931	1-164-159-11	CERAMIC 0.1MF 50V
C951	1-124-443-00	ELECT 100MF 20% 10V
C952	1-161-494-00	CERAMIC 0.022MF 25V
C953	1-124-925-11	ELECT 2.2MF 20% 50V
C954	1-124-925-11	ELECT 2.2MF 20% 50V
CNP11	*1-506-615-11	PIN, CONNECTOR 9P
CNP12	*1-564-341-11	(WR10ES,WR810:EXCEPT FOR US) ...PIN, CONNECTOR 7P
CNP12	*1-564-340-00	(WR810:US)....PIN, CONNECTOR 6P
CNP13	*1-564-707-11	PIN, CONNECTOR (SMALL TYPE) 5P
CNP14	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P
CNP15	*1-564-506-11	PLUG, CONNECTOR 3P
CNP16	*1-564-337-00	(WR10ES,WR810:EXCEPT FOR US)...PIN, CONNECTOR 3P
CNP18	*1-564-496-11	(WR10ES,WR810:EXCEPT FOR US)...PIN, CONNECTOR 3P

Ref.No.	Part No.	Description
CNP21	*1-565-344-11	PIN, CONNECTOR (PC BOARD) 8P
CNP22	*1-565-347-11	SOCKET, CONNECTOR (PC BOARD)8P
CNP81	*1-564-709-11	PIN, CONNECTOR (SMALL TYPE) 7P
CNP82	*1-564-339-00	PIN, CONNECTOR 5P
CNP83	*1-564-338-00	PIN, CONNECTOR 4P
CNP811	*1-564-666-11	PIN, CONNECTOR 10P
CNP812	*1-564-340-00	PIN, CONNECTOR 6P
CNP814	*1-564-340-61	PIN, CONNECTOR 6P
CNP815	*1-564-338-00	PIN, CONNECTOR 4P
CNP816	*1-564-340-71	PIN, CONNECTOR 6P
CNP817	*1-506-503-71	PIN, CONNECTOR 9P
CNP818	*1-564-338-61	PIN, CONNECTOR 4P
CNP819	*1-564-337-00	PIN, CONNECTOR 3P
CNP820	*1-564-708-11	PIN, CONNECTOR (SMALL TYPE) 6P
CP951	1-233-167-11	COMPOSITION CIRCUIT BLOCK
D11	8-719-107-94	DIODE 1SS132
D81	8-719-107-94	DIODE 1SS132
D101	8-719-000-26	DIODE US1060M
D201	8-719-000-26	DIODE US1060M
D701	8-719-200-77	DIODE 10E2N
D702	8-719-200-77	DIODE 10E2N
D703	8-719-200-77	DIODE 10E2N
D704	8-719-200-77	DIODE 10E2N
D705	8-719-200-77	DIODE 10E2N
D706	8-719-200-77	DIODE 10E2N
D707	8-719-200-77	DIODE 10E2N
D708	8-719-933-33	DIODE HZS6A11L
D709	8-719-000-26	DIODE US1060M
D710	8-719-933-33	DIODE HZS6A11L
D711	8-719-000-26	DIODE US1060M
D712	8-719-000-26	DIODE US1060M
D713	8-719-933-49	DIODE HZS7C1L
D714	8-719-933-41	DIODE HZS6C3L
D801	8-719-200-77	DIODE 10E2N
D802	8-719-000-26	DIODE US1060M
D803	8-719-000-26	DIODE US1060M
D804	8-719-000-26	DIODE US1060M
D805	8-719-000-26	DIODE US1060M
D806	8-719-200-77	DIODE 10E2N
D807	8-719-200-77	DIODE 10E2N
D808	8-719-000-26	DIODE US1060M
D809	8-719-000-26	DIODE US1060M
D810	8-719-000-26	(WR10ES,WR810:EXCEPT FOR US) ....DIODE US1060M
D811	8-719-000-26	(WR10ES,WR810:EXCEPT FOR US) ....DIODE US1060M
D901	8-719-812-42	DIODE TLY124
D902	8-719-303-00	DIODE SEL2510C
D903	8-719-812-42	DIODE TLY124
D904	8-719-300-71	DIODE SEL2210R
D905	8-719-303-84	DIODE SEL4914D
D906	8-719-812-42	DIODE TLY124
D907	8-719-303-00	DIODE SEL2510C
D908	8-719-812-42	DIODE TLY124
D909	8-719-300-71	DIODE SEL2210R
D910	8-719-303-84	DIODE SEL4914D
D931	8-719-948-81	DIODE GL8NG34T
D932	8-719-948-79	DIODE GL8HD34T
D933	8-719-948-79	DIODE GL8HD34T
D934	8-719-948-79	DIODE GL8HD34T
D951	8-719-000-26	DIODE US1060M
D952	8-719-000-26	DIODE US1060M



Ref.No.	Part No.	Description
FLT951	1-519-447-11	INDICATOR TUBE, FLUORESCENT
HE901	A-2108-043-C	(WR10ES,WR810:EXCEPT FOR US) ...CHASSIS ASSY, HEAD
HRP901		
HE901	A-2108-044-C	(WR810)....CHASSIS ASSY, HEAD
HRP901		
IC21	8-759-984-03	IC LM339N
IC81	8-759-111-44	IC UPC4570C-1
IC91	8-759-106-56	IC UPC1297CA
IC501	8-759-040-53	IC MC14053BCP
IC502	8-752-018-70	IC CX20187
IC503	8-752-033-61	IC CXA1198AP
IC504	8-759-240-52	IC TC4052BP
IC505	8-752-033-61	IC CXA1198AP
IC506	8-759-208-06	IC TC4051BPHB
IC507	8-759-601-23	IC M4023BP
IC508	8-759-945-58	IC RC4558P
IC509	8-759-945-58	IC RC4558P
IC510	8-759-945-58	IC RC4558P
IC701	8-759-945-58	IC RC4558P
IC801	8-759-633-23	IC M50964-208SP
IC802	8-759-240-71	IC TC4071BP
IC901	8-741-161-00	IC SBX1610-51
IC951	8-759-983-68	IC MB88517B-1023N
J501	1-565-258-11	JACK, PIN 4P (LINE IN/OUT)
J502	1-507-796-71	JACK (HEADPHONES)
L41	1-410-780-11	INDUCTOR 27MMH
L61	1-410-780-11	INDUCTOR 27MMH
LPF101	1-236-475-11	FILTER, LOW PASS
LPF201	1-236-475-11	FILTER, LOW PASS
M901	X-3343-408-1	MOTOR ASSY
PM901	1-454-456-11	SOLENOID, PLUNGER
PS501	1-532-685-00	LINK, IC(0.8A)
Q11	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q12	8-719-939-23	TRANSISTOR GP2S09-C
Q14	8-719-939-23	(WR10ES,WR810:EXCEPT FOR US) ...TRANSISTOR GP2S09-C
Q15	8-719-939-23	TRANSISTOR GP2S09-C
Q21	8-729-900-65	TRANSISTOR DTA144ES
Q81	8-729-116-57	TRANSISTOR 2SB1013
Q82	8-729-194-57	TRANSISTOR 2SC945-P
Q83	8-729-194-57	TRANSISTOR 2SC945-P
Q101	8-729-115-77	TRANSISTOR BAIL4M
Q102	8-729-115-77	TRANSISTOR BAIL4M
Q103	8-729-922-37	TRANSISTOR 2SD2144S
Q104	8-729-922-37	TRANSISTOR 2SD2144S
Q105	8-729-922-37	TRANSISTOR 2SD2144S
Q201	8-729-115-77	TRANSISTOR BAIL4M
Q202	8-729-115-77	TRANSISTOR BAIL4M
Q203	8-729-922-37	TRANSISTOR 2SD2144S
Q204	8-729-922-37	TRANSISTOR 2SD2144S
Q205	8-729-922-37	TRANSISTOR 2SD2144S
Q501	8-729-900-65	TRANSISTOR DTA144ES
Q502	8-729-900-65	TRANSISTOR DTA144ES
Q503	8-729-900-65	TRANSISTOR DTA144ES
Q504	8-729-900-65	TRANSISTOR DTA144ES



Ref.No.	Part No.	Description
Q505	8-729-900-65	TRANSISTOR DTA144ES
Q506	8-729-900-65	TRANSISTOR DTA144ES
Q507	8-729-115-77	TRANSISTOR BAIL4M
Q701	8-729-920-91	TRANSISTOR 2SB1187-F
Q702	8-729-808-76	TRANSISTOR 2SD1761-E
Q703	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q704	8-729-808-76	TRANSISTOR 2SD1761-E
Q705	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q706	8-729-802-22	TRANSISTOR 2SB1014
Q801	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q802	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q803	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q804	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q805	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q806	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q807	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q808	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q809	8-729-900-61	TRANSISTOR DTA114ES
Q810	8-729-900-61	TRANSISTOR DTA114ES
Q811	8-729-900-83	TRANSISTOR DTC124XS
Q812	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q813	8-729-900-83	TRANSISTOR DTC124XS
Q814	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q815	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q816	8-729-900-65	TRANSISTOR DTA144ES
Q817	8-729-900-65	TRANSISTOR DTA144ES
Q818	8-729-900-65	TRANSISTOR DTA144ES
Q819	8-729-801-93	TRANSISTOR 2SD1387
Q820	8-729-116-57	TRANSISTOR 2SB1013
Q821	8-729-900-65	TRANSISTOR DTA144ES
Q822	8-729-801-93	TRANSISTOR 2SD1387
Q823	8-729-116-57	TRANSISTOR 2SB1013
Q824	8-729-119-76	TRANSISTOR 2SA1175-HFE
Q825	8-729-801-93	TRANSISTOR 2SD1387
Q901	8-729-900-65	TRANSISTOR DTA144ES
Q951	8-729-900-65	TRANSISTOR DTA144ES
Q952	8-729-900-65	TRANSISTOR DTA144ES
Q953	8-729-900-65	TRANSISTOR DTA144ES
Q954	8-729-119-78	TRANSISTOR 2SC2785-HFE
Q955	8-729-119-78	TRANSISTOR 2SC2785-HFE
R11	1-247-834-11	CARBON 1.3K 5% 1/4W
R12	1-249-414-11	CARBON 560 5% 1/4W
R13	1-247-818-11	CARBON 300 5% 1/4W
R14	1-249-408-11	CARBON 180 5% 1/4W
R15	1-249-413-11	CARBON 470 5% 1/4W
R16	1-249-410-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 270 5% 1/4W
R17	1-249-437-11	CARBON 47K 5% 1/4W
R18	1-249-437-11	CARBON 47K 5% 1/4W
R21	1-249-425-11	CARBON 4.7K 5% 1/4W
R22	1-249-421-11	CARBON 2.2K 5% 1/4W
R23	1-249-421-11	CARBON 2.2K 5% 1/4W
R24	1-249-423-11	CARBON 3.3K 5% 1/4W
R25	1-249-429-11	CARBON 10K 5% 1/4W
R26	1-249-428-11	(WR810:US)....CARBON 8.2K 5% 1/4W
R26	1-249-431-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 15K 5% 1/4W

# TC-WR10ES/WR810


Ref.No.	Part No.	Description
R27	1-249-423-11	(WR810:US)....CARBON 3.3K 5% 1/4W
R27	1-249-425-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 4.7K 5% 1/4W
R28	1-249-421-11	(WR810:US)....CARBON 2.2K 5% 1/4W
R28	1-249-425-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 4.7K 5% 1/4W
R29	1-249-420-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 1.8K 5% 1/4W
R41	1-247-881-00	(WR810:US)....CARBON 120K 5% 1/4W
R41	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R42	1-249-404-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82 5% 1/4W
R42	1-249-405-11	(WR810:US)....CARBON 100 5% 1/4W
R43	1-247-882-11	CARBON 130K 5% 1/4W
R44	1-249-426-11	CARBON 5.6K 5% 1/4W
R45	1-249-428-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 8.2K 5% 1/4W
R45	1-249-430-11	(WR810:US)....CARBON 12K 5% 1/4W
R51	1-249-434-11	(WR810:US)....CARBON 27K 5% 1/4W
R51	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R52	1-249-393-11	CARBON 10 5% 1/4W
R53	1-247-883-00	CARBON 150K 5% 1/4W
R54	1-249-429-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 10K 5% 1/4W
R54	1-249-433-11	(WR810:US)....CARBON 22K 5% 1/4W
R61	1-247-881-00	(WR810:US)....CARBON 120K 5% 1/4W
R61	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R62	1-249-404-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82 5% 1/4W
R62	1-249-405-11	(WR810:US)....CARBON 100 5% 1/4W
R63	1-247-882-11	CARBON 130K 5% 1/4W
R64	1-249-426-11	CARBON 5.6K 5% 1/4W
R65	1-249-428-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 8.2K 5% 1/4W
R65	1-249-430-11	(WR810:US)....CARBON 12K 5% 1/4W
R71	1-249-434-11	(WR810:US)....CARBON 27K 5% 1/4W
R71	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R72	1-249-393-11	CARBON 10 5% 1/4W
R73	1-247-883-00	CARBON 150K 5% 1/4W
R74	1-249-433-11	(WR810:US)....CARBON 22K 5% 1/4W
R74	1-249-429-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 10K 5% 1/4W
R81	1-249-409-11	CARBON 220 5% 1/4W
R82	1-249-409-11	CARBON 220 5% 1/4W
R84	△ 1-212-849-00	FUSIBLE 4.7 5% 1/4W F
R85	1-249-437-11	CARBON 47K 5% 1/4W
R86	1-249-437-11	CARBON 47K 5% 1/4W
R87	1-249-429-11	CARBON 10K 5% 1/4W
R88	1-249-429-11	CARBON 10K 5% 1/4W
R101	1-249-433-11	CARBON 22K 5% 1/4W
R102	1-249-423-11	CARBON 3.3K 5% 1/4W

Ref.No.	Part No.	Description
R103	1-249-423-11	CARBON 3.3K 5% 1/4W
R104	1-247-887-00	CARBON 220K 5% 1/4W
R105	1-249-430-11	CARBON 12K 5% 1/4W
R106	1-249-423-11	CARBON 3.3K 5% 1/4W
R107	1-249-441-11	CARBON 100K 5% 1/4W
R108	1-249-428-11	CARBON 8.2K 5% 1/4W
R109	1-249-422-11	CARBON 2.7K 5% 1/4W
R110	1-249-425-11	CARBON 4.7K 5% 1/4W
R111	1-247-822-11	CARBON 430 5% 1/4W
R112	1-249-427-11	CARBON 6.8K 5% 1/4W
R113	1-249-415-11	CARBON 680 5% 1/4W
R114	1-249-429-11	CARBON 10K 5% 1/4W
R115	1-249-427-11	CARBON 6.8K 5% 1/4W
R116	1-249-425-11	CARBON 4.7K 5% 1/4W
R117	1-249-425-11	CARBON 4.7K 5% 1/4W
R118	1-249-425-11	CARBON 4.7K 5% 1/4W
R119	1-249-429-11	CARBON 10K 5% 1/4W
R120	1-249-427-11	CARBON 6.8K 5% 1/4W
R121	1-249-425-11	CARBON 4.7K 5% 1/4W
R122	1-249-425-11	CARBON 4.7K 5% 1/4W
R123	1-249-425-11	CARBON 4.7K 5% 1/4W
R124	1-249-421-11	CARBON 2.2K 5% 1/4W
R125	1-249-436-11	CARBON 39K 5% 1/4W
R126	1-249-421-11	CARBON 2.2K 5% 1/4W
R127	1-249-417-11	CARBON 1K 5% 1/4W
R128	1-249-421-11	CARBON 2.2K 5% 1/4W
R129	1-249-419-11	CARBON 1.5K 5% 1/4W
R130	1-249-409-11	CARBON 220 5% 1/4W
R131	1-249-429-11	CARBON 10K 5% 1/4W
R132	1-249-437-11	CARBON 47K 5% 1/4W
R133	1-249-429-11	CARBON 10K 5% 1/4W
R134	1-249-401-11	CARBON 47 5% 1/4W
R135	1-249-417-11	CARBON 1K 5% 1/4W
R201	1-249-433-11	CARBON 22K 5% 1/4W
R202	1-249-423-11	CARBON 3.3K 5% 1/4W
R203	1-249-423-11	CARBON 3.3K 5% 1/4W
R204	1-247-887-00	CARBON 220K 5% 1/4W
R205	1-249-430-11	CARBON 12K 5% 1/4W
R206	1-249-423-11	CARBON 3.3K 5% 1/4W
R207	1-249-441-11	CARBON 100K 5% 1/4W
R208	1-249-428-11	CARBON 8.2K 5% 1/4W
R209	1-249-422-11	CARBON 2.7K 5% 1/4W
R210	1-249-425-11	CARBON 4.7K 5% 1/4W
R211	1-247-822-11	CARBON 430 5% 1/4W
R212	1-249-427-11	CARBON 6.8K 5% 1/4W
R213	1-249-415-11	CARBON 680 5% 1/4W
R214	1-249-429-11	CARBON 10K 5% 1/4W
R215	1-249-427-11	CARBON 6.8K 5% 1/4W
R216	1-249-425-11	CARBON 4.7K 5% 1/4W
R217	1-249-425-11	CARBON 4.7K 5% 1/4W
R218	1-249-425-11	CARBON 4.7K 5% 1/4W
R219	1-249-429-11	CARBON 10K 5% 1/4W
R220	1-249-427-11	CARBON 6.8K 5% 1/4W
R221	1-249-425-11	CARBON 4.7K 5% 1/4W
R222	1-249-425-11	CARBON 4.7K 5% 1/4W
R223	1-249-425-11	CARBON 4.7K 5% 1/4W
R224	1-249-421-11	CARBON 2.2K 5% 1/4W

## Note:

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

## Note:

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
R225	1-249-436-11	CARBON 39K 5% 1/4W
R226	1-249-421-11	CARBON 2.2K 5% 1/4W
R227	1-249-417-11	CARBON 1K 5% 1/4W
R228	1-249-421-11	CARBON 2.2K 5% 1/4W
R229	1-249-419-11	CARBON 1.5K 5% 1/4W
R230	1-249-409-11	CARBON 220 5% 1/4W
R231	1-249-429-11	CARBON 10K 5% 1/4W
R232	1-249-437-11	CARBON 47K 5% 1/4W
R233	1-249-429-11	CARBON 10K 5% 1/4W
R234	1-249-401-11	CARBON 47 5% 1/4W
R235	1-249-417-11	CARBON 1K 5% 1/4W
R501	1-249-433-11	CARBON 22K 5% 1/4W
R502	1-249-433-11	CARBON 22K 5% 1/4W
R503	1-215-469-00	METAL 100K 1% 1/6W
R504	1-249-433-11	CARBON 22K 5% 1/4W
R505	1-249-433-11	CARBON 22K 5% 1/4W
R506	1-249-433-11	CARBON 22K 5% 1/4W
R507	1-247-864-11	CARBON 24K 5% 1/4W
R508	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R508	1-249-440-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82K 5% 1/4W
R509	1-249-437-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 47K 5% 1/4W
R509	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R510	1-247-881-00	(WR810:US)....CARBON 120K 5% 1/4W
R510	1-247-883-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 150K 5% 1/4W
R511	1-247-876-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 75K 5% 1/4W
R511	1-249-440-11	(WR810:US)....CARBON 82K 5% 1/4W
R512	1-249-436-11	CARBON 39K 5% 1/4W
R513	1-247-868-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 36K 5% 1/4W
R513	1-249-437-11	(WR810:US)....CARBON 47K 5% 1/4W
R514	1-247-891-00	CARBON 330K 5% 1/4W
R515	1-247-876-11	(WR810:US)....CARBON 75K 5% 1/4W
R515	1-249-438-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 56K 5% 1/4W
R516	1-247-881-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 120K 5% 1/4W
R516	1-249-441-11	(WR810:US)....CARBON 100K 5% 1/4W
R517	1-247-878-00	(WR810:US)....CARBON 91K 5% 1/4W
R517	1-249-440-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82K 5% 1/4W
R518	1-247-872-11	CARBON 51K 5% 1/4W
R519	1-247-874-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 62K 5% 1/4W
R519	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R520	1-247-891-00	(WR810:US)....CARBON 330K 5% 1/4W
R520	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R521	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R521	1-249-441-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 100K 5% 1/4W
R522	1-249-440-11	(WR810:US)....CARBON 82K 5% 1/4W
R522	1-249-438-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 56K 5% 1/4W

Ref.No.	Part No.	Description
R523	1-249-434-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 27K 5% 1/4W
R523	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R524	1-249-438-11	CARBON 56K 5% 1/4W
R525	1-247-876-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 75K 5% 1/4W
R525	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R526	1-249-433-11	CARBON 22K 5% 1/4W
R527	1-249-433-11	CARBON 22K 5% 1/4W
R528	1-249-429-11	CARBON 10K 5% 1/4W
R529	1-249-425-11	CARBON 4.7K 5% 1/4W
R531	1-247-864-11	CARBON 24K 5% 1/4W
R532	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R532	1-249-440-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82K 5% 1/4W
R533	1-249-437-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 47K 5% 1/4W
R533	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R534	1-247-881-00	(WR810:US)....CARBON 120K 5% 1/4W
R534	1-247-883-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 150K 5% 1/4W
R535	1-247-876-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 75K 5% 1/4W
R535	1-249-440-11	(WR810:US)....CARBON 82K 5% 1/4W
R536	1-249-436-11	CARBON 39K 5% 1/4W
R537	1-247-868-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 36K 5% 1/4W
R537	1-249-437-11	(WR810:US)....CARBON 47K 5% 1/4W
R538	1-247-891-00	CARBON 330K 5% 1/4W
R539	1-247-876-11	(WR810:US)....CARBON 75K 5% 1/4W
R539	1-249-438-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 56K 5% 1/4W
R540	1-247-881-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 120K 5% 1/4W
R540	1-249-441-11	(WR810:US)....CARBON 100K 5% 1/4W
R541	1-247-878-00	(WR810:US)....CARBON 91K 5% 1/4W
R541	1-249-440-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 82K 5% 1/4W
R542	1-247-872-11	CARBON 51K 5% 1/4W
R543	1-247-874-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 62K 5% 1/4W
R543	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R544	1-247-891-00	(WR810:US)....CARBON 330K 5% 1/4W
R544	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R545	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R545	1-249-441-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 100K 5% 1/4W
R546	1-249-438-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 56K 5% 1/4W
R546	1-249-440-11	(WR810:US)....CARBON 82K 5% 1/4W
R547	1-249-434-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 27K 5% 1/4W
R547	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R548	1-249-438-11	CARBON 56K 5% 1/4W

# TC-WR10ES/WR810

Ref.No.	Part No.	Description
R549	1-247-876-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 75K 5% 1/4W
R549	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R550	1-247-881-00	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 120K 5% 1/4W
R550	1-247-883-00	(WR810:US)....CARBON 150K 5% 1/4W
R551	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R551	1-249-437-11	(WR810:US)....CARBON 47K 5% 1/4W
R552	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R552	1-249-438-11	(WR810:US)....CARBON 56K 5% 1/4W
R553	1-247-864-11	(WR810:US)....CARBON 24K 5% 1/4W
R553	1-249-433-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 22K 5% 1/4W
R554	1-247-870-11	CARBON 43K 5% 1/4W
R555	1-249-432-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 18K 5% 1/4W
R555	1-249-433-11	(WR810:US)....CARBON 22K 5% 1/4W
R556	1-247-881-00	(WR810:US)....CARBON 120K 5% 1/4W
R556	1-249-441-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 100K 5% 1/4W
R557	1-249-436-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 39K 5% 1/4W
R557	1-249-438-11	(WR810:US)....CARBON 56K 5% 1/4W
R558	1-249-434-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 27K 5% 1/4W
R558	1-249-436-11	(WR810:US)....CARBON 39K 5% 1/4W
R559	1-249-433-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 22K 5% 1/4W
R559	1-249-435-11	(WR810:US)....CARBON 33K 5% 1/4W
R560	1-247-874-11	CARBON 62K 5% 1/4W
R561	1-247-870-00	(WR810:US)....CARBON 43K 5% 1/4W
R561	1-249-436-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 39K 5% 1/4W
R562	1-247-883-00	(WR810:US)....CARBON 150K 5% 1/4W
R562	1-249-441-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 100K 5% 1/4W
R563	1-249-437-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 47K 5% 1/4W
R563	1-249-439-11	(WR810:US)....CARBON 68K 5% 1/4W
R564	1-249-432-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 18K 5% 1/4W
R564	1-249-435-11	(WR810:US)....CARBON 33K 5% 1/4W
R565	1-249-429-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 10K 5% 1/4W
R565	1-249-432-11	(WR810:US)....CARBON 18K 5% 1/4W
R566	1-249-439-11	CARBON 68K 5% 1/4W
R567	1-249-435-11	(WR10ES,WR810:EXCEPT FOR US) ...CARBON 33K 5% 1/4W
R567	1-249-437-11	(WR810:US)....CARBON 47K 5% 1/4W
R568	1-249-433-11	CARBON 22K 5% 1/4W
R569	1-249-433-11	CARBON 22K 5% 1/4W
R570	1-249-433-11	CARBON 22K 5% 1/4W
R571	1-249-429-11	CARBON 10K 5% 1/4W

Ref.No.	Part No.	Description
R572	1-249-425-11	CARBON 4.7K 5% 1/4W
R574	1-247-887-00	CARBON 220K 5% 1/4W
R575	1-249-425-11	CARBON 4.7K 5% 1/4W
R576	1-249-441-11	CARBON 100K 5% 1/4W
R577	1-249-428-11	CARBON 8.2K 5% 1/4W
R578	1-249-423-11	CARBON 3.3K 5% 1/4W
R579	1-249-441-11	CARBON 100K 5% 1/4W
R580	1-249-421-11	CARBON 2.2K 5% 1/4W
R581	1-249-441-11	CARBON 100K 5% 1/4W
R582	1-249-429-11	CARBON 10K 5% 1/4W
R583	1-249-429-11	CARBON 10K 5% 1/4W
R584	1-249-429-11	CARBON 10K 5% 1/4W
R585	1-249-429-11	CARBON 10K 5% 1/4W
R701	1-249-413-11	CARBON 470 5% 1/4W
R702	1-249-417-11	CARBON 1K 5% 1/4W
R703	1-249-427-11	CARBON 6.8K 5% 1/4W
R704	1-249-419-11	CARBON 1.5K 5% 1/4W
R705	1-247-854-11	CARBON 9.1K 5% 1/4W
R706	1-249-419-11	CARBON 1.5K 5% 1/4W
R707	1-249-425-11	CARBON 4.7K 5% 1/4W
R708	1-249-413-11	CARBON 470 5% 1/4W
R709	1-249-417-11	CARBON 1K 5% 1/4W
R710	1-249-425-11	CARBON 4.7K 5% 1/4W
R711	1-249-417-11	CARBON 1K 5% 1/4W
R712	1-249-421-11	CARBON 2.2K 5% 1/4W
R713	1-249-429-11	CARBON 10K 5% 1/4W
R714	1-249-430-11	CARBON 12K 5% 1/4W
R715	1-249-417-11	CARBON 1K 5% 1/4W
R801	1-249-409-11	CARBON 220 5% 1/4W
R802	1-249-407-11	CARBON 150 5% 1/4W
R803	1-249-407-11	CARBON 150 5% 1/4W
R804	1-249-407-11	CARBON 150 5% 1/4W
R805	1-249-407-11	CARBON 150 5% 1/4W
R806	1-249-407-11	CARBON 150 5% 1/4W
R807	1-249-407-11	CARBON 150 5% 1/4W
R808	1-249-409-11	CARBON 220 5% 1/4W
R809	1-249-410-11	CARBON 270 5% 1/4W
R810	1-249-410-11	CARBON 270 5% 1/4W
R811	1-249-421-11	CARBON 2.2K 5% 1/4W
R812	1-249-421-11	CARBON 2.2K 5% 1/4W
R813	1-249-421-11	CARBON 2.2K 5% 1/4W
R814	1-249-425-11	CARBON 4.7K 5% 1/4W
R815	1-249-425-11	CARBON 4.7K 5% 1/4W
R816	1-249-417-11	CARBON 1K 5% 1/4W
R817	1-249-417-11	CARBON 1K 5% 1/4W
R818	1-249-417-11	CARBON 1K 5% 1/4W
R819	1-249-429-11	CARBON 10K 5% 1/4W
R820	1-249-429-11	CARBON 10K 5% 1/4W
R821	1-249-421-11	CARBON 2.2K 5% 1/4W
R822	1-249-417-11	CARBON 1K 5% 1/4W
R823	1-249-429-11	CARBON 10K 5% 1/4W
R824	1-249-429-11	CARBON 10K 5% 1/4W
R825	1-249-421-11	CARBON 2.2K 5% 1/4W
R826	1-249-417-11	CARBON 1K 5% 1/4W
R827	1-247-903-00	CARBON 1M 5% 1/4W
R828	1-249-433-11	CARBON 22K 5% 1/4W
R829	1-249-433-11	CARBON 22K 5% 1/4W
R830	1-249-433-11	CARBON 22K 5% 1/4W

Ref.No.	Part No.	Description
R831	1-249-436-11	CARBON 39K 5% 1/4W
R832	1-247-895-00	CARBON 470K 5% 1/4W
R833	1-249-433-11	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 22K 5% 1/4W
R834	1-249-436-11	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 39K 5% 1/4W
R835	1-247-895-00	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 470K 5% 1/4W
R836	1-249-436-11	CARBON 39K 5% 1/4W
R837	1-247-895-00	CARBON 470K 5% 1/4W
R838	1-249-433-11	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 22K 5% 1/4W
R839	1-249-436-11	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 39K 5% 1/4W
R840	1-247-895-00	(WR10ES,WR810:EXCEPT FOR US) ....CARBON 470K 5% 1/4W
R841	1-249-441-11	CARBON 100K 5% 1/4W
R842	1-249-417-11	CARBON 1K 5% 1/4W
R843	1-249-439-11	CARBON 68K 5% 1/4W
R845	1-249-433-11	CARBON 22K 5% 1/4W
R846	1-249-417-11	CARBON 1K 5% 1/4W
R847	1-249-421-11	CARBON 2.2K 5% 1/4W
R848	1-249-417-11	CARBON 1K 5% 1/4W
R849	1-249-433-11	CARBON 22K 5% 1/4W
R850	1-247-731-11	CARBON 22 5% 1/2W
R851	1-249-421-11	CARBON 2.2K 5% 1/4W
R852	1-249-417-11	CARBON 1K 5% 1/4W
R853	1-249-433-11	CARBON 22K 5% 1/4W
R854	1-249-425-11	CARBON 4.7K 5% 1/4W
R855	1-249-417-11	CARBON 1K 5% 1/4W
R856	1-249-433-11	CARBON 22K 5% 1/4W
R857	1-247-731-11	CARBON 22 5% 1/2W
R858	1-249-425-11	CARBON 4.7K 5% 1/4W
R859	1-249-425-11	CARBON 4.7K 5% 1/4W
R861	1-249-415-11	CARBON 680 5% 1/4W
R862	1-249-415-11	CARBON 680 5% 1/4W
R863	1-249-415-11	CARBON 680 5% 1/4W
R864	1-249-413-11	CARBON 470 5% 1/4W
R865	1-249-433-11	CARBON 22K 5% 1/4W
R867	1-249-417-11	CARBON 1K 5% 1/4W
R868	1-249-433-11	CARBON 22K 5% 1/4W
R870	1-249-417-11	CARBON 1K 5% 1/4W
R871	1-249-429-11	CARBON 10K 5% 1/4W
R872	1-249-429-11	CARBON 10K 5% 1/4W
R873	1-249-429-11	CARBON 10K 5% 1/4W
R901	1-249-407-11	CARBON 150 5% 1/4W
R902	1-249-409-11	CARBON 220 5% 1/4W
R903	1-249-411-11	CARBON 330 5% 1/4W
R904	1-249-413-11	CARBON 470 5% 1/4W
R905	1-249-415-11	CARBON 680 5% 1/4W
R906	1-249-417-11	CARBON 1K 5% 1/4W
R907	1-249-420-11	CARBON 1.8K 5% 1/4W
R908	1-249-424-11	CARBON 3.9K 5% 1/4W
R909	1-249-407-11	CARBON 150 5% 1/4W
R910	1-249-409-11	CARBON 220 5% 1/4W
R911	1-249-411-11	CARBON 330 5% 1/4W
R912	1-249-413-11	CARBON 470 5% 1/4W
R913	1-249-415-11	CARBON 680 5% 1/4W
R914	1-249-417-11	CARBON 1K 5% 1/4W

Ref.No.	Part No.	Description
R915	1-249-420-11	CARBON 1.8K 5% 1/4W
R916	1-249-424-11	CARBON 3.9K 5% 1/4W
R917	1-249-416-11	CARBON 820 5% 1/4W
R918	1-249-419-11	CARBON 1.5K 5% 1/4W
R919	1-249-433-11	CARBON 22K 5% 1/4W
R921	1-249-430-11	CARBON 12K 5% 1/4W
R922	1-249-430-11	CARBON 12K 5% 1/4W
R931	1-249-407-11	CARBON 150 5% 1/4W
R932	1-249-409-11	CARBON 220 5% 1/4W
R934	1-249-411-11	CARBON 330 5% 1/4W
R951	1-247-903-00	CARBON 1M 5% 1/4W
R952	1-249-441-11	CARBON 100K 5% 1/4W
R953	1-249-441-11	CARBON 100K 5% 1/4W
R954	1-249-430-11	CARBON 12K 5% 1/4W
R955	1-249-422-11	CARBON 2.7K 5% 1/4W
R956	1-249-427-11	CARBON 6.8K 5% 1/4W
R957	1-249-429-11	CARBON 10K 5% 1/4W
R958	1-249-425-11	CARBON 4.7K 5% 1/4W
R959	1-249-441-11	CARBON 100K 5% 1/4W
R960	1-249-441-11	CARBON 100K 5% 1/4W
R961	1-249-433-11	CARBON 22K 5% 1/4W
RV41	1-228-990-00	RES, ADJ, CARBON 1K (PB LEVEL L)
RV42	1-230-497-11	RES, ADJ, CARBON 22K (REC BIAS L)
RV61	1-228-990-00	RES, ADJ, CARBON 1K (PB LEVEL R)
RV62	1-230-497-11	RES, ADJ, CARBON 22K (REC BIAS R)
RV101	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL L:A)
RV102	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL L:B)
RV201	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL R:A)
RV202	1-228-994-00	RES, ADJ, CARBON 10K (REC LEVEL R:B)
RV501	1-238-138-11	RES, VAR, CARBON 50K/50K (BALANCE)
RV502	1-238-139-11	RES, VAR, CARBON 20K/20K (REC LEVEL)
RV801	1-228-996-00	RES, ADJ, CARBON 47K (QUICK REVERS:A)
RV802	1-228-996-00	RES, ADJ, CARBON 47K (QUICK REVERS:B)
RY81	1-515-614-11	RELAY
S11	1-571-281-21	SWITCH, LEAF (HALF DET)
S12	1-571-281-21	SWITCH, LEAF (ERASE PROOF:SIDE A)
S13	1-571-281-21	SWITCH, LEAF (ERASE PROOF:SIDE B)
S14	1-571-281-21	SWITCH, LEAF (CrO2)
S15	1-571-281-21	SWITCH, LEAF (METAL)
S701	1-553-336-21	SWITCH, PUSH (POWER)
S702	1-570-307-11	SWITCH, VOLTAGE CHANGE (VOLTAGE)
S705	1-571-028-11	SWITCH, LEAF (REC SW)
S901	1-554-303-21	SWITCH, KEY BOARD (STOP:A)
S902	1-554-303-21	SWITCH, KEY BOARD (PAUSE:A)
S903	1-554-303-21	SWITCH, KEY BOARD (REC MUTE:A)
S904	1-554-303-21	SWITCH, KEY BOARD (REC:A)
S905	1-554-303-21	SWITCH, KEY BOARD (REV:A)
S906	1-554-303-21	SWITCH, KEY BOARD (FWD:A)
S907	1-554-303-21	SWITCH, KEY BOARD (REW:A)
S908	1-554-303-21	SWITCH, KEY BOARD (FF:A)
S909	1-554-303-21	SWITCH, KEY BOARD (STOP:B)
S910	1-554-303-21	SWITCH, KEY BOARD (PAUSE:B)
S911	1-554-303-21	SWITCH, KEY BOARD (REC MUTE:B)
S912	1-554-303-21	SWITCH, KEY BOARD (REC:B)
S913	1-554-303-21	SWITCH, KEY BOARD (REV:B)

**Note:**  
The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.



**Note:**  
Les composants identifiés par une marque  $\Delta$  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref.No.	Part No.	Description
S914	1-554-303-21	SWITCH, KEY BOARD (FWD:B)
S915	1-554-303-21	SWITCH, KEY BOARD (REW:B)
S916	1-554-303-21	SWITCH, KEY BOARD (FF:B)
S917	1-554-303-21	SWITCH, KEY BOARD (RESET)
S918	1-554-303-21	SWITCH, KEY BOARD (MEMORY)
S919	1-554-303-21	SWITCH, KEY BOARD (A/B)
S921	1-570-837-11	SWITCH, SLIDE (TIMER)
S922	1-570-837-11	SWITCH, SLIDE (DIRECTION MODE)
S931	1-554-303-21	SWITCH, KEY BOARD (AMS/BLANK SKIP)
S932	1-554-303-21	SWITCH, KEY BOARD (HIGH SPEED)
S933	1-554-303-21	SWITCH, KEY BOARD (NORMAL SPEED)
S934	1-554-303-21	SWITCH, KEY BOARD (A+B REC)
S941	1-570-837-11	SWITCH, SLIDE (DOLBY NR)
S942	1-570-849-11	SWITCH, SLIDE (MPX FILTER)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T51	1-433-335-11	TRANSFORMER, BIAS OSCILLATION
T71	1-433-335-11	TRANSFORMER, BIAS OSCILLATION
T81	1-433-336-11	TRANSFORMER, BIAS OSCILLATION
T701	△ 1-449-460-11	(WR810:AEP,UK)...TRANSFORMER, POWER
T701	△ 1-449-461-11	(WR810:E).....TRANSFORMER, POWER
T701	△ 1-449-614-11	(WR10ES,WR810:US,Canadian) ...TRANSFORMER, POWER
TP83	*1-564-338-00	PIN, CONNECTOR 4P
TP91	*1-564-508-11	PLUG, CONNECTOR 5P
TP801	*1-564-505-11	PLUG, CONNECTOR 2P (TEST)
TP802	*1-564-507-11	PLUG, CONNECTOR 4P (QUICK)
X801	1-567-686-11	OSCILLATOR, CERAMIC (4MHz)
X951	1-567-771-11	VIBRATOR, CERAMIC (6MHz)


**ACCESSORY & PACKING MATERIAL**

1-559-533-11	CORD, CONNECTION
1-463-974-11	(WR810:AEP,UK,E) ...REMOTE COMMANDER (RM-900W)
*3-349-028-21	(WR810)...INDIVIDUAL CARTON
3-349-028-31	(WR10ES)...INDIVIDUAL CARTON
*3-349-029-01	CUSHION
3-703-450-01	INSTRUCTION
3-750-133-11	(WR810:Canadian,AEP,UK,E) ...MANUAL, INSTRUCTION
3-750-133-21	(WR810:US).....MANUAL, INSTRUCTION
3-750-133-41	(WR810:AEP).....MANUAL, INSTRUCTION
3-750-133-51	(WR810:West Germany)...MANUAL, INSTRUCTION
3-750-209-21	(WR10ES).....MANUAL, INSTRUCTION

**Note:**

The components identified by mark  or dotted line with mark  are critical for safety. Replace only with part number specified.

**Note:**

Les composants identifiés par une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.